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TRICARE Regional Office - South
7800 IH-10 West, Suite 400
San Antonio, TX 78230

8. PERFORMING ORGANIZATION REPORT NUMBER

9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)
US Army Medical Department Center and School
Bldg 2841 MCCS-HRA (US Army Baylor Program in HCA)
3151 Scott Road, Suite 1412
Fort Sam Houston, TX 78234-6135

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14. ABSTRACT

The Coast Guard Health Services Program is faced with many challenges in the post 9/11 environment. The Program's role in supporting Coast Guard missions changes as mission priorities change. Looking at the environment in terms of contingency theory, the Program must find the "right fit" for adapting to this ever-changing environment. One method of coping with this environment is through the development of a care management program for Coast Guard healthcare facilities. Care management is an approach to managing care that includes preventive services as a means to decrease the disease burden of a population, improve health, and decrease costs. This graduate management project evaluates the organizational culture of the Coast Guard Health Services Program from a contingency theory perspective in order to assess the feasibility of a care management program for Coast Guard healthcare facilities. This evaluation is done using a survey instrument that looks at the care management dimensions of quality improvement, resource management, clinical data management, non-clinical data management, information utility, prevention, educational interventions, comprehensiveness, and continuity of care in Coast Guard healthcare facilities.

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RUNNING HEAD: CARE MANAGEMENT IN COAST GUARD

The Feasibility of Care Management in Coast Guard Healthcare Facilities: A Contingency Theory Perspective and Analysis of Organizational Culture

John G. Allen

Baylor University

Graduate Program in Healthcare Administration

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Abstract

The Coast Guard Health Services Program is faced with many challenges in the post 9/11 environment. The Program's role in supporting Coast Guard missions changes as mission priorities change. Looking at the environment in terms of contingency theory, the Program must find the "right fit" for adapting to this ever-changing environment. One method of coping with this environment is through the development of a care management program for Coast Guard healthcare facilities. Care management is an approach to managing care that includes preventive services as a means to decrease the disease burden of a population, improve health, and decrease costs. This graduate management project evaluates the organizational culture of the Coast Guard Health Services Program from a contingency theory perspective in order to assess the feasibility of a care management program for Coast Guard healthcare facilities. This evaluation is done using a survey instrument that looks at the care management dimensions of quality improvement, resource management, clinical data management, non-clinical data management, information utility, prevention, educational interventions, comprehensiveness, and continuity of care in Coast Guard healthcare facilities.

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Introduction

Conditions that Prompted the Study

The purpose of this project is to evaluate the organizational culture of the Coast Guard Health Services Program from a contingency theory perspective in order to assess the feasibility of a care management program in Coast Guard healthcare facilities.

Several profound internal and external environmental changes have impacted the manner in which the Coast Guard Health Services Program delivers and manages healthcare. Events such as the 9/11 terrorist attacks, the Coast Guard's transfer to the Department of Homeland Security (DHS), changing Coast Guard missions, TRICARE Next Generation (TNEX) policies, the increasing size of the Coast Guard, and growing concerns over the cost, quality, and access to healthcare in the U.S. have forced the Coast Guard (and consequently, the Coast Guard Health Services Program) to adapt to a new organizational niche. One method the Coast Guard can adapt to these changes is through the development of a care management program.

Care management is a population-based approach to healthcare delivery that is comprehensive in its approach, combining other healthcare management practices such as disease management (DM), utilization management (UM), and case management (CM) (Lighter & Fair, 2003; Kongstvedt, 2003). Numerous studies have suggested care management programs can produce high quality care that is cost effective (Doxtater and Rodriguez, 1998; Linden, Adams, & Roberts, 2003; Wilson & MacDowell, 2004; Crosson & Midvag, 2004). Retrospective studies exist that have looked at *actual* care management (and DM) programs and evaluated their effectiveness in reducing costs and providing quality care have shown mixed results (Guadagnino, 2003; Greenwald, 2004;

Congressional Budget Office, 2004; Managed Care Digest, 2004; Fireman, Bartlett & Selby, 2004). Coast Guard healthcare facilities could potentially benefit from implementing a care management program.

Internal and external stakeholders could also benefit from care management. One prominent group of stakeholders is the Coast Guard Health and Safety Directorate and its subordinate commands, which affect and carry out healthcare policy. Other stakeholders include the customers the Coast Guard serves such as the maritime public, active duty and reserve personnel, the Department of Defense (DoD), the Department of Homeland Security, TRICARE, military and civilian healthcare providers, and others. These entities play a part in affecting the Coast Guard's ability to meet its missions. Accordingly, the Coast Guard's commitment to these stakeholders emphasizes the importance of the cost savings and improved quality of healthcare that a care management program could have in Coast Guard healthcare facilities.

One method of assessing the value of a care management program is through organizational theories that serve as a tool to help an organization evaluate critical factors such as resource management, leadership, policy, and environmental changes that can influence or force an organization to adjust its behavior and actions. Organizational theories can help to predict outcomes of intervention or policy changes. These theories include constructs and variables, which are linked by propositions and hypotheses and attempt to make predictions about policy change (Coast Guard healthcare facilities in this case). Organizational theory can guide decision-making (Bacharach, 1989). This study uses contingency theory as a framework to assess the feasibility of a care management program in Coast Guard healthcare facilities.

Problem Statement

In recent years, the Coast Guard Health Services Program has been challenged by many environmental changes. Such changes have forced the Program to adapt and find a new organizational niche. Currently, the Coast Guard Health Services Program has no comprehensive program in place to assist it in adapting too many of these dynamic changes. Care management is one such tool that can help the Program meet these challenges because its comprehensive approach embraces health management practices such as UM, DM, and CM. These practices could lead to better Coast Guard healthcare facility performance.

The outline of this study begins with the literature review, followed by the purpose statement, methods and procedures to be used in the study, a discussion of the results, and concludes with a discussion of the findings and utility of the results. The literature review introduces the reader to a more detailed look at care management and related operational definitions. The literature review also looks at key components of the Coast Guard's Health Services Program that are conducive to care management, as well its relationships with TRICARE and support role of Coast Guard missions. This overview provides an operationalized context for further discussion of care management in Coast Guard healthcare facilities. Next, the literature review looks at contingency theory and discusses its value in evaluating the utility of a care management program. Following the literature review, the purpose statement will be introduced using a contingency theory model in the form of a construct, variable, and hypothesis. This model will specify relationships, operational definitions, and a measure in the form of a survey instrument to operationalize the model construct and variables and test the model hypothesis.

Following the purpose statement, the survey instrument methodology will be explained to identify the intention and background of the survey instrument. This discussion is followed by a review of the results and discussion and explanation of the findings. The project concludes by reviewing the major points of the survey findings as they relate to the project's research question: an assessment of Coast Guard Health Services Program organizational culture as it relates to the feasibility of care management in Coast Guard healthcare facilities.

Literature Review

Care Management

In 1998, the Institute of Medicine (IOM) National Round Table on Healthcare Quality posited that the quality of care, not managed care, lay at the root of the problem in the U. S. healthcare system (Chassin & Galvin, 1998). Medical errors, poor patient-physician relations, underutilization of technology (such as the Internet), non-science based healthcare, unreliability in data capturing systems, and other problems contributed to the lack of quality in the healthcare system. To combat this problem, the IOM emphasized the importance of a "system" change in the U.S. healthcare system. The systems approach promotes safety, encourages collaboration among healthcare professionals, and improves outcomes, both clinical and non-clinical (IOM, 2001). Care management is one such "systems" approach.

Overview of Care Management. Care management is an approach to managing care that includes preventive services and well-person care as a means to decrease the disease burden of a population, improve health, and decrease costs. It utilizes a systems-based approach to healthcare that includes population health management, evidence-

based healthcare, and modern clinical administrative tools (such as clinical practice guidelines and patient education materials) to affect improvements in the healthcare of populations, optimizing the care of each individual consumer (Lighter & Fair, 2003). It is not a concept that was built from the ground up; rather, it is a contemporary quality improvement (QI) concept built from other healthcare management practices.

Care management historically has been merely an extension of what is traditionally known as DM. Lighter and Fair (2003) define DM as an approach to caring for individuals with specific diseases based on the complete understanding of the disease, the therapeutic regimens that are of value in treating the disease, and the effects of treatments. Although care management is an extension of DM, there are a few key differences.

One difference is that DM focus on individuals while care management focuses on populations. By focusing on populations, care management can focus on diseases that are costly and have high potential for morbidity. Another key difference is that although both DM and care management fall within the framework of diagnosis and treatment, care management attempts to incorporate preventive care and services (Lighter & Fair, 2003). Care management also incorporates other medical management disciplines including health risk assessment, primary prevention, demand management, and utilization management (Kongstvedt, 2003). All of these disciplines are critical components of a care management program.

Juhn, Solomon, and Petty (1998) of Kaiser-Permanente propose a 6 element framework that explains the tenets of care management. They are:

1. *Comprehensiveness.* Knowledge of disease or prevention practices such as best practices, optimum outcomes, objective measurements, and appropriate diagnostic and therapeutic modalities are understood and scientifically based.
2. *Data available to identify consumers at risk.* The target population with the disease or risk factor can be identified.
3. *Prevention and/or cure focus.* Groups of individuals at risk for a disorder receive educational interventions and diagnostic and treatment regimens that are scientifically based and based on best practices.
4. *Educational interventions.* Funding and promoting educational initiatives serves as the impetus for patients taking more responsibility for their own care. This may reduce health costs and increase patient satisfaction.
5. *Continuity of care.* Establishing prolonged relationships with patients improves communication. Open communication reduces information barriers between patients and caregivers.
6. *Data management systems with inclusion of clinical information.* This element is arguably the most important because it incorporates the fundamentals that drive a care management program: data and information. Population based interventions such as ensuring a reliable and valid data management infrastructure have two purposes in affecting data and information. One is to help capture and measure outcomes, such as incidence and prevalence. Second is to help identify populations at risk or under study in a care management program. Together, these can create a care management program that is efficient and cohesive.

Metrics in Care Management. The success of a care management program is determined by process and outcome measures, both clinical and non-clinical. Therefore, it is exceedingly important that performance measures have validity and are significant to the organization developing or operating a care management program. The American Academy of Family Physicians (1998) recommends using process and outcome measures that are scientifically valid, capable of improvement, important enough to need intervention and influence population health, and meaningful to physicians and patients. These concepts require that care managers have evaluation criteria that are congruent with the QI goal of continuous improvement.

Sneed (1990) reinforces this notion by suggesting that QI managers should adopt what he calls "statistical thinking" when evaluating processes. Sneed defined statistical thinking as:

> A thought process, which recognizes that variation is all around us and present in everything we do, all work is a series of interconnected processes, and identifying, characterizing, quantifying, controlling, and reducing variation provides opportunity for improvement (p. 118).

This concept is at the very heart of care management because care management seeks to reduce variation in processes through the combining of medical management disciplines. While Sneed's (1990) statistical thinking view addresses process measures, the debate rages on about which one is more important: process or outcome. Both approaches to measuring care management effectiveness and efficiency require deep consideration by care managers.

Donabedian (1966), the progenitor of the Structure-Process-Outcome (SPO) model for determining how heath care quality should be measured, believed that outcomes were the best measure. He suggested that outcomes hold the most validity because results "speak for themselves," or have face validity. Because healthcare processes are so variable, some researchers have tended to favor outcome measures (Lighter & Fair, 2003). However, processes are undeniably relevant because failed outcomes usually lead to changes in processes. Lighter and Fair (2003) note that the choice to use process or outcome measures depends on the goal of the care management program. Therefore, it is paramount that care managers consider what their goals are and identify the correct metrics to use.

Financial Considerations in Care Management Programs. Another important measure that should be captured is the financial impact of a care management program on an organization. The costs associated with developing a care management program must be weighed against the benefits. This is often done in the form of a cost effective analysis. Developmental costs can be direct (related to the cost objective of developing a care management program) or indirect (not directly associated with the cost objective of developing a care management program). Some of the direct costs associated with developing a care management program are the purchasing of technology to support care management programs, costs associated with hiring a consulting team to study the financial analysis of impact of the program and interventions, and others. Indirect costs include the time that leadership must spend on the development of the program and overhead costs. These developmental costs can also be part of the assessment of the cost

effectiveness of a care management program (Lighter & Fair, 2003; Kongstvedt, 2003; Linden, Adams, & Roberts, 2003).

Some clinical conditions have an enormous fiscal impact on U.S. healthcare costs. One study demonstrated that the top fifteen most costly medical conditions accounted for half of the increase in healthcare spending between 1987 and 2000. Additionally, the same study noted that the top 5 most costly medical conditions-heart diseases, mental disorders, pulmonary disorders, cancer and trauma-accounted for 31% of the increase. (Thorper, Florence, & Joski, 2004). Because care management focuses on populations and these diseases clearly have a large impact on the population, a care management could be a cost effective way to manage such conditions.

Linden et al. (2003) suggest that the most widely used method for measuring the cost effectiveness of a care management program is commonly known as the total population approach model. This model uses a pre-test and post-test design to make predictions about the cost effectiveness of a care management program. Using baseline data, typically claims data, comparisons are made to actual values of subsequent time periods. The model in Appendix A demonstrates the total population approach. In this model, each contract measurement year is compared with the baseline year, after a claims run out is complete. The baseline data can be either utilization specific data or cost specific data. However, because the total population approach model uses baseline data to predict cost effectiveness, care mangers must be aware of the potential problems with this approach (Linden et al., 2003).

Although the total population approach may be the industry standard for measuring the cost effectiveness of a care management program, Linden et al. (2003)

note there are reliability and validity concerns with this approach. The primary shortcoming is the lack of a control group with which comparisons can be made. For various reasons, such as concerns over cost, unethical treatment of patients (control groups not receiving intervention) or the poor quality of claims data (which relies on accurate medical coding), control groups are not typically utilized. Absence of a control group could cause confounding and lead to spurious results. Other problems with this model include selection bias, such as the selection criteria for patients, and temporal challenges, like program enrollment patterns, which impact the timing of cause and effect relationship from interventions.

Additional biases include variation in medical costs such as inflation, changes in member's cost sharing of medical expenses, and new medical technology. Furthermore, medical cost estimates derived from intermediate processes of care are often incorrect (Fireman et al., 2004; Congressional Budget Office, 2004). Assessment of utilization-specific data is often the preferred approach due to the inaccuracy of medical costs (Linden, et al., 2003). Individuals evaluating care management programs must be aware of these challenges and make necessary adjustments to ensure validity of the results. The same holds true for reliability in that the selection parameters should allow for consistency in results.

One method for ensuring better reliability and validity in forecasting the cost effectiveness of a care management program is the use of time-series models. These models do not use baseline independent variables to predict future observations. Rather, they use past observations to predict future observations. Functionally, these models would appear as: $Y_0 = a + b(x_{-1}) + b(x_{-2}) + b(x_{-3}) + b(x_{-4}) \ldots b\ (X_n)$, where each x is a

prior observation starting at the most recent. Time-series model can also be used to model cyclical or seasonal variations, such as time periods when there is greater historical utilization of healthcare services by patients (e.g., increased incidence of influenza during winter months).

Developing a Care Management Program and Barriers to Implementation. An abundance of literature exists on implementing and developing a care management program. Because each healthcare organization is unique, the development and implementation of a care management program will vary with each facility. Additionally, managers may face many barriers in developing a care management program.

The key to developing of a care management program involves an understanding of the salient themes upon which a care management program should be built. Young and Barret (1997) offer a four-step process for developing a care management program:

1. *Phase 1: Elaboration of Mission and Vision and Current State Assessment.* This phase requires a healthcare organization to conduct a self assessment of internal and external processes to ensure it aligns with the emerging care management model. This includes the evaluation of infrastructure such as information systems, outcome measurements, and organizational structure and alignment and quality assurance programs. This evaluation should be weighed against the organization's current mission and vision to see if they require changing.
2. *Phase 2: Benchmarking and Future State Design.* This phase defines those elements that will be targeted in developing future care management practices. These elements are cost, classical medical outcomes, functional and health

status outcomes, and customer satisfaction. Organizations typically study these elements as they relate to their care management practices to identify and correct gaps in processes with the goal of improving services and reducing costs.

3. *Phase 3: Construction of the Model and Long Term Plan.* This phase considers the organizational infrastructure of a care management program, stakeholder responsibilities, and level of horizontal and vertical integration. Also, it considers how the program will be implemented and operated so that it is functionally and structurally situated as a core business.
4. *Phase 4: Staged Implementation.* Staged implementation deals largely with the development and training of staff who take on new roles in a care management program. Staffs are typically comprised of multidisciplinary teams (e. g., administrators, physicians, nurses) that drive the development and operation of the care management system. Transitioning to a new program can be challenging, but training and communication can mitigate problems.

These are classical, fundamental steps in the development and implementation of a care management program. Because of the wide array of healthcare organizations that could employ a care management program, development of each care management phase could easily deviate from this approach.

In the effort of developing and implementing a care management program, there are barriers that could pose some problems for stakeholders. One of the greatest potential barriers is the provider. Providers often perceive care management as "cookbook medicine." Providers view care management programs as lacking scientific validation,

increasing malpractice risk, requiring unnecessary additional time on the provider's part, and limiting provider innovation and autonomy (Lighter & Fair, 2003). It is important to obtain provider buy-in. Even if a provider is already involved in a care management program, his or her level of commitment and actions could easily determine the program's success. Providers must be convinced of improved patient outcomes, decreased malpractice risk, and an unchanged workload. Methods for convincing providers include formal training on care management, phased implementation to incrementally introduce care management practices, and financial incentives (Magnus, 1999; Young & Barret, 1997). If a provider is convinced of these criteria, the chances for care management program success are greater. Other barriers include payer concerns (how much will the program cost?); consumer concerns (restricted care and lack of individual attention); supplier concerns (decreased market share); employee concerns (job security and workload increase); and system challenges (inadequate data systems) (Lighter & Fair, 2003; Kongstvedt, 2003).

Care Management Programs in Practice. Studies of the outcomes of care management programs are few. The reason for this is unclear, although research suggests that the lack of findings may be due to the fact that care management is a relatively new concept (Lighter & Fair, 2003), or organizations view it as being synonymous with DM (Fireman et al., 2004). Although there are a few studies that discuss care management outcomes, there are a greater number of studies that discuss the outcomes of care management components, especially in the realm of DM. Studies in both instances have produced mixed results.

Studies on the outcomes of care management programs have largely focused on the quality aspect of care management. A study conducted by Blue Cross and Blue Shield of Michigan and Blue Care Network Health Maintenance Organization (HMO) polled more than 700 members enrolled in a care management program. The care management program had several goals including improving provider-patient relations, encouraging and empowering patients to take more responsibility for their own healthcare, and providing education and information resources such as handbooks, videos, and the ability to call registered nurses for medical advice. The study demonstrated that members were extremely satisfied with the care management program (Managed Care Weekly Digest, 2004).

The study also found that members would recommend their care management program to others, that it improved their interaction with physicians, and prompted them to take action to make positive lifestyle changes. Approximately 88% of those surveyed noted that they were "satisfied" or "very satisfied" with the program. Nine out of 10 users said their encounters with providers had a positive impact on their decision to better manage their health conditions. The program also had a hand in improving already established provider-patient relations according to those surveyed. Seven out of 10 members indicated that their experience improved their relations with their healthcare provider (Managed Care Weekly Digest, 2004). The purported costs savings associated with these programs, however, are controversial. The concept that care management programs are cost effective is not conclusive.

Greenwald (2001) cites a hypertension DM program that has reduced healthcare costs for a union sponsored health management plan, called the 1199 National Benefit

Fund. To decrease its costs, the 1199 National Benefit Fund first identified its target population: individuals at high risk for hypertension. As a result, 1,500 members were enrolled in the program. The program was then customized based on the needs of this population by looking at demographics such as age, sex, race, and other variables. Once these variables were assessed, program mangers identified cost effective methods for managing hypertension in this population.

In collaboration with other healthcare professionals, the 1199 National Benefit Fund developed an integrated hypertension DM program. Some of the management tools included counseling and hypertension medication and screening guidelines. The Fund asserts that counseling has enabled patients to become more informed about hypertension, focusing on risk factors such as diet, alcohol, and high sodium intake. The program also calls for utilization of more cost effective medications before more expensive medications are used. These efforts have purportedly saved the Fund $755,000 annually and helped members better control their hypertension (Greenwald, 2001). However, other studies have posited that DM programs have not reduced healthcare costs.

A primary reason why it has been difficult to attribute cost savings to DM programs is the inability to capture all costs associated with the healthcare delivery *process.* Many measures focus on the intermediate phase of healthcare delivery, which does not account for overall spending (Congressional Budget Office, 2004). Other problems include those issues cited earlier, such as selection bias, shortcomings of the total population approach such as regression to the mean, and other confounding factors (Linden, et al, 2003; Congressional Budget Office, 2004). In a report to the

Congressional Budget Office entitled *An Analysis of the Literature of Disease Management Programs* (2004), researchers concluded that there is insufficient evidence that DM programs can reduce healthcare spending. The report looked at DM programs for congestive heart failure, coronary artery disease, and diabetes.

Fireman et al. (2004) looked at DM programs for coronary artery disease, heart failure, diabetes, and asthma implemented by Kaiser Permanente of Northern California. From 1996 to 2002, Kaiser formed a multidisciplinary approach to managing these chronic conditions through more cost effective medication administration, better communication and follow up, greater utilization of evidenced based clinical guidelines (e.g., CPGs), and other means, with the ultimate goal of reducing healthcare costs. However, the study concluded that the DM programs did not reduce healthcare costs.

What the study revealed was, in fact, that healthcare costs increased. Table 1 demonstrates the total costs associated with the Kaiser Permanente DM programs from 1996 to 2002. Costs arose for each of the four conditions under DM programs. However, the study considers if costs might have been greater *without* DM programs. The researchers do not know the answer to this question with certainty, but posit that perhaps DM programs are better suited to *control* costs, rather than *reduce* costs. Table 1 points out healthcare costs from 1996 to 2002 for demographically similar patients, who did not have any of the diseases and were not enrolled in a DM program for any condition. One can see that the increases in total costs for each condition were less than that for demographically similar patients without these conditions and not under a DM program. These results suggest that DM programs could control costs.

Table 1

Total Costs (In 2002 Dollars) Among Patients With Each Condition Compared With Demographically Similar Patients Without The Condition, 1996-2002

	Year				Changes from 1996 to 2002	
Population	1996	1998	2000	2002	Amount	Percent
Coronary artery disease	$11,275	$12,107	$12,148	$13,385	$2,110	19%
Coronary artery disease comparison	$3,274	$3,512	$3,694	$4,206	$932	28%
Heart failure	$16,392	$18,951	$17,888	$19,922	$3,530	22%
Heart failure comparison	$3,930	$4,224	$4,431	$5,018	$1,088	28%
Diabetes	$6,763	$7,144	$7,021	$7,600	$837	12%
Diabetes comparison	$2,702	$2,817	$2,909	$3,365	$663	25%
Asthma	$3,464	$3,606	$3,778	$4,395	$932	27%
Asthma comparison	$1,670	$1,675	$1,758	$2,117	$447	27%

Note: Table from Fireman et al., 2004.

However, Crosson and Madvig (2004) point out what they perceive as inconsistencies in the Fireman et al. (2004) study. One issue is that the Fireman et al. (2004) study was looking for an absolute decline in cost savings for an entire population, rather than relative costs; that is, a comparison against projected or forecasted costs. Crosson and Madvig (2004) also point out that perhaps why the Fireman et al. (2004) study did not show a decline in healthcare costs is that the study compared subsequent costs against a baseline that was *already* much lower than that of comparable organizations at the time. For instance, premiums for Kaiser Permanente of Northern California range about 10% below the U.S. average, and 20% to 25% below that of East Coast markets. This again demonstrates that the lack of standardization in the assessment

methodologies of DM programs. Despite these variations, many of the same studies which challenge the idea of cost savings from DM programs see value in them.

Despite lingering concerns, DM shows promise in improving the quality of care and controlling costs. For instance, DM quality indicators from the Fireman et al. (2004) study demonstrate this: from 2000 to 2002, the percentage of CAD patients with blood pressure below 140/90 increased from 58% to 68%; from 1996 to 2002, median LDL improved from 125 to 99 among tested CAD patients and from 132 to 108 among tested diabetes patients. There were substantial improvements in other areas as well. As noted, there are also many benefits in terms of patient satisfaction with care management programs.

Overview of the Coast Guard Health Services Program

Like the healthcare delivery systems of the other military services, the Coast Guard's Health Services Program has many components that are important in the consideration of a care management program. These components include organization and personnel, key programs, information technology capabilities, the Program budgeting process, the Coast Guard's relationship with TRICARE, and the role of the Program in supporting Coast Guard missions.

Organization and Personnel. The Coast Guard Medical Manual defines the mission of the Coast Guard's Health Services Program:

> To support Coast Guard missions by providing quality healthcare to maintain a fit and healthy active duty corps, by meeting the healthcare needs of dependents and retirees to the maximum extent permitted by law and resources, and by providing authorized occupational health services to civilian employees.

The highest level of the organization charged with carrying out this mission is the Director of Health and Safety of the Coast Guard who is accountable to the Secretary of Homeland Security and the Commandant of the Coast Guard. The Director is also responsible for developing and implementing the Coast Guard's overall health program (Coast Guard Medical Manual).

Subordinate to the Director are Maintenance and Logistics Commands (MLCs), each with separate commands in the Pacific (Alameda, CA) and Atlantic (Norfolk, VA) regions of the U.S. MLCs can be viewed as intermediate commands that have three functions in the Coast Guard's Health Services Program:

1. Interpret and implement healthcare policies as set forth by the Commandant
2. Develop and implement the Coast Guard's overall Health Services, and Safety and Environmental Health programs
3. Serves as Healthcare Advisor to Commander, Maintenance and Logistics Commands

Specific examples of MLC functions and responsibilities include ensuring compliance with HIPAA requirements, healthcare budgeting, and administration of the Coast Guard's QI program. Many of these MLC functional roles are delegated to Coast Guard units such as Coast Guard healthcare facilities and health services personnel such as medical officers, health services technicians, medical liaison officers, and clinic administrators. MLC holds oversight responsibility for ensuring that these delegated responsibilities are adhered to. One example is triennial QI site surveys conducted by MLC to ensure Coast Guard healthcare facilities are following the Coast Guard's QI Program (Coast Guard Medical Manual).

There are five types of Coast Guard healthcare facilities: clinics, satellite facilities, dental clinics, sickbays, and super sickbays. Of the five types of facilities, only sick bays do not have a medical officer, which is a physician, physician assistant, and nurse practitioners. Dental officers are found at dental clinics. Each facility has differing levels of capabilities and operates in different environments, from the sickbay of an independent duty Health Services Technician (senior enlisted person trained to provide medical care in the absence of a medical officer) on a Coast Guard cutter (a vessel 65 feet in length or greater, having adequate accommodations for crew to live on board) to a well-staffed Coast Guard clinic at a training facility. All Coast Guard healthcare facilities provide care to active duty personnel in support of operational missions. Non-active duty beneficiaries are provided care subject to the availability of space and facilities and the capabilities of medical staff (Coast Guard Medical Manual). Appendix B contains a listing of all Coast Guard healthcare facilities, the type of facility, and its geographic location. Facilities without a medical officer are not included. The medical and dental staffs of Coast Guard healthcare facilities are a key component in the delivery of healthcare services.

As mentioned, Coast Guard healthcare facilities contain differing medical and dental staffing levels that determine facility capabilities. Medical personnel include medical officers, who are physicians (including flight surgeons), physician assistants, and nurse practitioners who are members of the Coast Guard or Public Health Service detailed to the Coast Guard. Other medical personnel include pharmacy officers and health services technicians. Dental personnel include dentists and dental hygienists. Collectively, the mission of these personnel is to understand and support the operational missions of the Coast Guard (Coast Guard Medical Manual). In meeting this mission,

medical and dental personnel follow the guidance of several health services programs implemented and developed by the Director and MLCs.

Key Programs of the Coast Guard Health Services Program. The Coast Guard's Health Services Program contains many sub-component programs that are aimed at procuring and retaining personnel who are physically fit and emotionally adaptable to military life. Most of these programs are preventive, routine, and administrative in nature, and are administered at Coast Guard healthcare facilities. These programs also consider the dynamics of the environment in which the Coast Guard often operates, in that these programs are designed to monitor and protect the health of Coast Guard personnel. Occupational health, preventive medicine, physical examinations, and QI initiatives are key medical sub-component programs that support the mission of the Coast Guard's Health Services Program.

The Occupational Medical Surveillance and Evaluation Program (OMSEP) is the physical examination process for the Coast Guard's Occupational Health Program. Because of the work environment and occupational activities inherent to Coast Guard missions, personnel can be exposed to health hazards with the potential for disease or injury. The OMSEP is designed to identify work related diseases or conditions, through baseline and periodic examinations, at a stage when modifying the exposure or providing medical intervention could potentially arrest disease progression or prevent recurrences. The fundamental purpose of this program is to identify pre-existing health conditions, provide risk specific periodic screenings, and monitor clinical laboratory tests and biologic functions suggestive of work related environmental exposures. OMSEP physical examination requirements are based on Occupational Safety and Health Administration

(OSHA) standards (Coast Guard Medical Manual). Several Coast Guard preventive medicine programs are congruent with the OMSEP purpose and philosophy.

The Coast Guard's preventive medicine programs are aimed at preventing disease and illness. Specifically, immunizations, communicable disease control, and other epidemiology practices are means by which the Coast Guard employs preventive medicine activities. The Coast Guard's Communicable Disease Program focuses on identifying the disease, making appropriate notifications to authorities about the presence of the disease, and measuring the impact on operational capabilities. As with the Coast Guard's other preventive medicine programs, the Immunizations and Chemoprophylaxis Program seeks to maintain the health of Coast Guard personnel so as to fulfill operational missions. Immunizations may be administered based on geographical locations of personnel or at service accession points, such as recruit training (Immunizations and Chemoprophylaxis Manual). The final major preventive medicine program the Coast Guard employs is the Tuberculosis Prevention and Control Program. Because of the highly contagious nature of TB, the Coast Guard has mechanisms in place in which personnel are screened routinely, with additional screening mechanisms and treatment guidelines designed for those individuals who have been exposed to or have TB (Coast Guard Medical Manual).

Another key Health Services Program is the QI program. The goal of the Coast Guard's QI program is to provide the highest quality healthcare to beneficiaries. The Coast Guard follows the IOM's six dimensions of quality-which are safety, effectiveness, patient centeredness, timeliness, efficiency, and equitableness-in its effort to implement QI measures. The QI program is applicable to all Coast Guard healthcare facilities. Each

facility follows QI processes, such as those required for training, credentials maintenance and review, Patient Advisory Committee (PAC) meetings, patient satisfaction surveys, and laboratory certification, which are outlined in a manual called the Quality Assurance Implementation Guide (QAIG). Serving as a guideline, the QAIG is tailored to each facility's local conditions, such as staff and facility size and clinical capabilities, in that it allows each facility to follow QI practices that are relevant to each facility. To ensure compliance with QI activities outlined in the QAIG, the Coast Guard has a program called the Clinic Certification Program (Coast Guard Medical Manual).

Under the Clinic Certification Program, QI site surveys are conducted by MLC staff on a triennial schedule to evaluate each facility's adherence to QI requirements. Successful completion of a site survey leads to clinic certification. Larger Coast Guard clinics are required to obtain accreditation from an external source, such as the Joint Commission on the Accreditation of Healthcare Organizations (JCAHO). Many of these programs are greatly enhanced by the Coast Guard's information technology capabilities.

Information Technology Capabilities. The Coast Guard has an evolving Medical Information Systems (MIS) plan that helps facilitate, support, and document the activities of many of these programs. The MIS program is a key component in the overall management of Coast Guard healthcare facilities. Functionally, the MIS allows Coast Guard leadership, at all levels of the organization, to track operational readiness, health systems management, and patient access to care. Specific systems of the MIS program are Composite Healthcare System (CHCS) I and II, Shipboard Automated Medical Systems (SAMS), Dental Common Access System (DENSCAP), and Medical Readiness System (MRS). These systems allow for tracking personnel medical and dental readiness,

referral information, occupational health, medical training, material management, collection of other health insurance (OHI) money, monitor productivity, facility workload, and healthcare costs, and other functions. Some of these systems interface with DoD systems, while others are hosted internally. The Coast Guard remains aware that technology is not static, and closely monitors DoD's efforts to upgrade medical informational technology in order to follow suit (Coast Guard Medical Manual). Currently, connectivity between Coast Guard healthcare facilities and higher commands is scant and under development. Enterprise architecture development is being facilitated by the Coast Guard's MIS Program Review Board, which meets on a bi-weekly basis to discuss MIS system development (Coast Guard Medical Manual). One of the issues that has a great impact on acquiring the resources for these programs is the Coast Guard's budgeting process.

Budgeting Process. The development and management of the Coast Guard's medical budget can be viewed from a macro and micro perspective. The macro view reflects the political and legislative activity during the Congressional budget process, which determines the level of funding the Coast Guard's Health Services Program will receive annually. The micro view reflects the internal responsibilities and functions that affect the Coast Guard's medical budget.

On the macro level, the Coast Guard budget process is comprised of two phases, the budget formulation phase and the budget execution phase. The budget formulation phase starts with the preparation of estimated Coast Guard funding requirements as an operating administration of the DHS. The budget estimates reflect the missions, programs, and responsibilities assigned to the Coast Guard in carrying out these missions.

This includes the Coast Guard's medical budget (Financial Resource Management Manual).

Once the budget estimates are made, they are incorporated into the Office of Management and Budget (OMB) stage, which becomes part of the President's budget. From the time that the President's budget is submitted to Congress on the first Monday in February of a given year until June 30, at which time the house completes final action on the annual appropriations bill, the budget is debated and reconciled. Stakeholders in the budget reconciliation process include various congressional and budget committees, executive branch officials, the public (including interest groups), and Members of Congress. Stakeholders hope to gain a competitive advantage in getting everything in their budget. Thus, the "tragedy of the commons" philosophy is prominent in the negotiating and reconciliation process: stakeholders are looking out for their own interests and the constituents they represent. October 30 of the following fiscal year is the time in which appropriations are provided (Financial Resource Management Manual; Weissert & Weissert, 1996).

The budget execution stage begins approximately eight months prior to the beginning of the fiscal year. During this time, funds are allocated, obligated, and expended to accomplish the (in this case) Coast Guard's budget plan. It is at this point that the Coast Guard's Health Services Program has an actual budget with which to work (Financial Resource Management Manual; House of Representatives). This level of the budget process represents the micro perspective.

The Commandant (G-C) of the Coast Guard holds the ultimate responsibility for ensuring the "good stewardship of public funds," meaning that public finds can only be

used for purposes authorized by law and in accordance with those rules and regulations. Most of the technical responsibilities for carrying out this construct are delegated to specific offices in the chain of command. This chain of command begins with the Office of the Chief of Staff (G-CCS), which assists the Commandant in the allocation of resources to Coast Guard programs and functional areas and monitors the execution of approved financial plans. Accountable to both G-C and G-CCS is the Office of the Director of Resources (CG-8), the Chief Financial Officer of the Coast Guard. CG-8 holds a very important position in the chain of command because it is the operational component that links the Allotment Fund Code (AFC) managers to G-C and G-CCS. AFCs are the functional categories of the Coast Guard budget, such as medical and retired pay. CG-8 is responsible to G-CCS for the overall execution of the Coast Guard's approved budget (Financial Resource Management Manual).

There is an array of AFC managers that administer the budgets of various Coast Guard programs. The AFC manager for the Coast Guard medical budget (designated as AFC-57) is the Office of Resource Planning (G-WRP), which works in collaboration with the Health and Safety Directorate (G-WK) to administer the Coast Guard's medical budget. G-WK, in turn, targets AFC-57 funds to MLCs for administering health services programs in their regions (Financial Resource Management Manual; Coast Guard Medical Manual).

The grass roots level of medical budget execution takes place between MLCs and those health service programs in their area of responsibility. Such responsibilities include approval and funding of non-federal medical care, healthcare equipment purchases, clinic budget approvals, and reimbursement to the Department of Defense for care provided to

Coast Guard beneficiaries (Coast Guard Medical Manual). Notably, the Coast Guard's AFC-57 funding has increased in recent years.

Table 2

Coast Guard AFC-57 Funding from 1999-2004

Year	AFC-57 Funding Level
1999	$131,225,563
2000	$146,763,220
2001	$191,040,061
2002	$207,944,182
2003	$415,896,930
2004	$456,148,301

Note. Funding information from Coast Guard Office of Resource Planning as of August 31, 2004.

Table 2 demonstrates the Coast Guard budget levels for AFC-57 from 1999-2004 The period from 2002-2003 reflects the substantial increase in funding the program has received, due primarily to the Coast Guard's transfer to the DHS and the role that the Health Services Program has in supporting Coast Guard missions.

The Role of the Coast Guard Health Services Program in Supporting Coast Guard Missions. A key component of the Coast Guard's Health Services Program mission is the support of Coast Guard missions. Coast Guard Commandant Admiral Thomas Collins noted that historians will look back at 2001 and 2002 as a significant landmark in Coast Guard history due to the 9/11 terrorist attacks (Collins, 2004). Many organizational changes were affected by 9/11 including the transfer to the Department of Homeland Security in March 2003 and new homeland security missions. However,

traditional Coast Guard missions were not terminated with these changes; rather, they were divided into homeland security and non- homeland security missions (Homeland Security Act, 2002). With these changes came a shift in resource hours that focused predominantly on homeland security missions after 9/11 and less on non-homeland security missions. The General Accounting Office (2002) reports that since 9/11, Coast Guard resource hours to traditional missions such as fisheries law enforcement have declined due to the commitments to new homeland security missions. Unfortunately, resources and strategic planning to meet these new missions have been slower to develop.

Despite usual budgetary challenges, the Coast Guard has gradually increased its resources and planning efforts. In 2001, the Coast Guard had approximately 36,000 people in uniform but grew to 41,000 by the end of 2003, nearly a 14% increase. Six thousand more personnel are expected to be added to the Coast Guard through 2006, increasing the service size to 47,000. This will be the largest expansion of the Coast Guard since World War II (Barnard, 2004; Kime & Fraram, 2004). The contingent of Coast Guard assets such as aircraft and ships has also been updated due to the Integrated Deepwater System (IDS) Program, with more vessels and aircraft to be produced through 2024 to replace outdated equipment (United States Coast Guard, 2004). Strategically, legislation such as the Maritime Transportation Security Act of 2002 has established new security standards for domestic and foreign vessels (United States Coast Guard, 2004). These adaptations have helped the Coast Guard better adjust to meeting the demands placed on it.

These changes also have a profound impact on the Health Services Program. With a growing force, increased and dangerous missions that challenge safety, and fewer

resources with which to conduct these missions, the role of the program takes an even more important position than ever before. Its ability to maintain medical readiness, operationally defined as the ability of the Coast Guard's Health Service Program to keep individuals fit for worldwide duty to meet Coast Guard missions, is a key component in the post 9/11 Coast Guard. Another important component of the Health Services Program is the Coast Guard's relationship with TRICARE. TRICARE is a critical element in the delivery and management of health services to Coast Guard beneficiaries.

Relationship with TRICARE. The Coast Guard's relationship with TRICARE is a key component in the delivery and management of healthcare for eligible beneficiaries. This is particularly true due to the sweeping changes brought about by TNEX contracts in 2004, which have created new business practices that are profoundly different from those of previous TRICARE contracts. As highlighted by the 2005 National Defense Authorization Act, the reasons for these changes include the growing cost of healthcare, the military's growing reliance on civilian healthcare providers, and most importantly, the need for the MHS to provide for medical readiness. Key business practice changes under the TNEX contracts include how healthcare is financed and how TRICARE contractor performance is measured. These practices have a direct impact on the Coast Guard's Health Services Program, especially in how healthcare is financed.

One of the objectives of the TNEX contracts is to optimize the military MTF. MTF optimization means that the Managed Care Support Contractor (MCSC) is to optimize the delivery of healthcare services in the direct care system for all MHS beneficiaries. The MCSC is also incentivized to optimize the MTF because the MCSC is required to minimize actual costs as underwriters of the TNEX managed care support

contract. Through pre-authorizations for referrals and maximizing enrollment for MHS beneficiaries in MTFs and thereby reducing overall healthcare costs, the MCSC receives financial incentives (TRIICARE Management Affairs, 2004).

This practice is congruent with the Coast Guard's longstanding (pre-TNEX) requirement for pre-approval of non-federal healthcare referrals. Under this program, beneficiaries referred from Coast Guard healthcare facilities to non-federal entities (TRICARE network and non-network providers) required pre-approval before care could be rendered. Now much of that responsibility has been taken on by the MCSC, although the Coast Guard still pre-authorizes some care not reviewed by the MCSC. At the MLC and Directorate level, these processes play a large part because these entities essentially "pay the bills" for referrals of care for Coast Guard beneficiaries from Coast Guard healthcare facilities. Thus, referral and utilization management takes on greater significance at Coast Guard healthcare facilities (Coast Guard Medical Manual).

Overview of Contingency Theory. Contingency theory focuses on an organization and how it functions and organizes in a given environment, with the goal of finding the right "fit" for the organization in the environment. Contingency theory also suggests that in finding this right fit, that there is no one best way to organize an organization, and any one way of organizing is not equally effective in another organization (Tosi and Slocum, 1984), where effective is defined as the ability of an organization to achieve desired outcomes (Aday et al., 1998; Daft, 2003). Contingency theory applies to organizations that are open systems (also known as natural systems) and follow rational theory. Open systems are those organizations whose environment encompasses the sum of the political, economic, social, and regulatory forces that exert pressure on them. Rational theory is the

ability to exploit and maintain resources of concern to the organization given specific circumstances in the external environment. Taken together, the synergistic school of thought is that an organization typically tries to adapt to or anticipate the environmental pressures by using resources to adapt. Larger organizations that are more centralized and mechanistic in their structure have greater difficulty adapting to environmental changes. Smaller and more horizontal organizations have more success in unpredictable and turbulent environments and can more readily adapt to environmental changes. Thus, in adapting to environmental changes, it is important that an organization achieve balance between changes in the external environment and internal strategies, regardless of the organization's size (Daft, 2003).

In considering the Coast Guard in the context of contingency theory, it is obvious that it is a large organization with an open system that employs rational theory. Some of the pressures exerted on the Coast Guard are profoundly clear: the 9/11 terrorist attacks, ongoing terror threats, annual budget battles in Congress, and others. There are many resources the Coast Guard is employing in response to these environmental changes such as increasing the size of the Coast Guard and revamping and developing Coast Guard assets. Clearly, the Coast Guard Health Services Program is facing these precise issues because it supports Coast Guard missions through healthcare delivery and management. Thus, a care management program could help the Coast Guard adapt to these environmental changes.

Purpose Statement

The purpose of this paper is to assess the feasibility of a care management program for Coast Guard healthcare facilities using contingency theory as a framework.

In making this assessment, an organizational theory conceptual model is employed and included as Appendix C (Bacharach, 1989). This model rationalizes the previous discussion of contingency theory by identifying a construct, variable, and measure, as well as a hypothesis to be tested.

The construct employed in this model is *environment*. *Environment* is operationally defined as the ever-changing setting in which the Coast Guard Health Services Program exists. This construct reflects the relationship the Program has with its environment and the efforts to fit or adapt to that environment. The variable that operationalizes the construct of *environment* is *organizational culture*. *Organizational culture* is operationally defined as the perceptions and attitudes held by individuals who work in the Coast Guard Health Services Program. The hypothesis to be tested is: *the organizational culture of the Health Services Program shapes the environment in which it exists.* Therefore, an assessment of the organizational culture can be used to predict how Program stakeholders might respond to a care management program.

Methods and Procedures

The measure used to test the hypothesis identified in the purpose was a Stakeholder's Analysis using a survey instrument, included as Appendix D. The purpose of the survey instrument was to assess the attitudes and perceptions of Coast Guard Health Services Program stakeholders towards the proposal of a care management program for Coast Guard healthcare facilities.

In the context of assessing Health Services Program stakeholder attitudes and perceptions, attitude can be defined as evaluative statements or judgments concerning objects, people, or events (Robbins, 2003). Perception is defined as a process by which

individuals organize and interpret their sensory impressions in order to give meaning to their environment (Robbins, 2003). These two constructs are important because they demonstrate how Health Services Program stakeholder's perceptions could shape their attitude towards a care management program in Coast Guard healthcare facilities

For this survey, the population assessed consists of individuals working in four organization levels of the Coast Guard Health Services Program: clinic administrators, clinic providers, MLC Health Services staff, and Coast Guard Headquarters Health Services staff. Each has different responsibilities and roles in the Health Services Program. Organizational level responses to the survey are provided in Appendix E.

Clinic administrators are officers, Chief Warrant Officers, and senior enlisted personnel assigned to manage and administer healthcare facilities. Some of their key responsibilities include fiscal oversight and preparation of clinic budgets, maintaining medical liaison with other local agencies, supervision of facility military and civilian personnel, development and implementation clinic training programs, and ensuring appropriate that clinical data management systems, such as a CHCS, report reliable and valid data. Clinic providers are those Coast Guard healthcare facility staff who provide medical care to patients, which for the purpose of the survey were physicians, physician assistants, dentists, nurse practitioners, and pharmacists (also known as medical officers, pharmacy officers, and dental officers). The MLC and Coast Guard Headquarters Health Services Programs levels were described in detail in the literature review; consequently, each organizational layer has responsibilities for the development and implementation of Coast Guard healthcare policies, including policies for Coast Guard healthcare facilities (Coast Guard Medical Manual). The divisions of MLC assessed were Medical

Administration (kma), Quality Assurance (kqa), Operational Medicine (kom), and Budget and Clinical lnformation Systems (ka). At the Coast Guard Headquarters Level, the divisions which were assessed were Health Services (G-WKH), Operational and Clinical Medicine (G-WKH-1), Quality Assurance (G-WKH-2), and Health Systems Management (G-WKH-3).

Instrument Design. The survey instrument is a five point Likert scale, with nine statements regarding the dimensions of care management as they relate to Coast Guard healthcare facilities. The scale was quantified as follows: 1-strongly agree, 2-agree, 3-neutral, 4- disagree, and 5-strongly disagree. The choice of neutral provided an opportunity for the individual being surveyed to not offer a viewpoint, regardless of the reason.

Results

Sample Representativeness and Response Rates. The total population assessed was 178. There were $N = 111$ total responses to the survey, providing an overall sample response rate of 62.9%. The response rates for the different organizational levels assessed was 83.8% for MLC (31 of 37 possible), 78.8% for clinic administrators (26 of 33 possible), 50.0% for clinic providers (45 of 90 possible), and 50% for Coast Guard Headquarters (9 of 18 possible). Surveys were emailed to participants. The three options available for respondents to return their survey were email, fax, or regular mail.

Instrument Reliability and Validity. Interitem reliability of the survey instrument was assessed using Cronbach's alpha reliability coefficient, which was $\alpha = .8386$, providing evidence that the instrument is measuring a unidimensional construct: attitudes and perceptions towards care management dimensions. The Cronbach's alpha reliability

coefficient was set at $\alpha = .80$. The instrument was validated using construct validity, specifically face validity, where the results "speak for themselves." There were nine dimensions of care management to assess these constructs: Quality Improvement, Resource Management, Clinical Data Management, Non-clinical Data Management, Information Utility, Prevention and/or Cure Focus, Educational Interventions, and Comprehensiveness. These dimensions are listed in Table 3, and are paired with the survey statement they relate to. These care management dimensions reflect the same ones identified in the literature review, such as in Juhn et al.'s (1998) tenets of care management.

Table 3

Care Management Dimensions Aligned with Survey Statements

Care Management Dimension	Survey Statement
Quality Improvement	1. The Coast Guard's Quality Improvement (QI) Program improves the quality of care in Coast Guard Healthcare Facilities.
Resource Management	2. Coast Guard Healthcare Facilities have adequate personnel and financial resources to support Coast Guard missions
Clinical Data Management	3. The Coast Guard's Medical Information System (MIS) has the ability to *accurately* report clinical information **on illnesses and injuries** encountered at all Coast Guard Healthcare Facilities.
Non-Clinical Data Management	4. The Coast Guard's Medical Information System (MIS) has the ability to *accurately* measure the **cost** of delivering healthcare at Coast Guard Healthcare Facilities.
Information Utility	5. The Coast Guard has the ability to develop its healthcare programs and policies based on clinical data reported from Coast Guard Healthcare Facilities
Prevention and/or Cure Focus	6. The Coast Guard develops its healthcare programs based on scientifically proven medical practices.
Educational Interventions	7. Educational initiatives such as smoking cessation and Work-Life programs can reduce healthcare problems among the Coast Guard's active duty population.
Comprehensiveness	8. The Coast Guard does a good job of keeping its healthcare providers abreast of knowledge on the best and current practices in delivering health care.
Continuity of Care	9. The coordination between Coast Guard Healthcare Facilities and TRICARE encourages continuity of care for active duty members

Instrument Descriptive Statistics. Descriptive statistics are provided in Tables 4 and 5 and Figure 1. Descriptive statistics are also found in Appendix E. Table 4 illustrates the mean and standard deviation for each response given by respondents. Table 5 demonstrates the frequency of the responses given by each organizational level. Figure 1 ranks each organizational level's response to the care management dimensions statements

Table 4

Sample Mean Responses to Care Management Dimensions

Care Management	CP		CA		MLC		HQ		Total Sample	
Dimension	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
1. Quality Improvement	2.46	0.98	2.19	0.75	2.55	0.62	1.89	1.36	2.38	0.89
2. Resource Management	3.02	1.14	3.46	1.21	3.23	1.18	3.11	0.78	3.19	1.14
3. Clinical Data Management	3.22	0.81	3.46	1.02	3.65	0.98	3.56	1.13	3.19	0.97
4. Non-Clinical Data Management	3.30	0.87	3.46	0.95	3.65	0.98	3.56	1.13	3.46	0.93
5. Information Utility	3.02	1.02	2.92	1.20	3.00	1.00	2.89	1.45	2.98	1.08
6. Prevention and/or Cure Focus	2.63	1.08	2.77	1.88	3.23	0.85	2.22	0.67	2.79	0.99
7. Educational Interventions	1.83	0.82	1.88	0.65	1.97	0.84	2.22	0.44	1.91	0.77
8.Comprehensiveness	3.04	1.30	2.96	1.00	3.26	0.81	3.33	1.0	3.11	1.09
9. Continuity of Care	2.41	0.93	2.50	0.91	2.68	1.16	2.78	0.83	2.54	0.99

Note. CP = Clinic providers, CA = Clinic administrators, MLC = Maintenance and Logistics Command, HQ = Coast Guard Headquarters

Table 5

Frequency of Survey Responses

Care Management Dimension	Response choices	CP *n*	CP Percent	CA *n*	CA Percent	MLC *n*	MLC Percent	HQ *n*	HQ Percent	Total Sample *n*	Total Sample Percent
1. Quality	1-Strongly agree	7	15.22%	2	7.69%	0	-	5	55.56%	14	12.50%
Improvement	2-Agree	20	43.48%	20	76.92%	16	51.61%	2	22.22%	58	51.79%
	3-Neutral	10	21.74%	1	3.85%	13	41.94%	1	11.11%	25	22.32%
	4-Disagree	9	19.57%	3	11.54%	2	6.45%	0	-	14	12.50%
	5-Strongly disagree	0	-	0	-	0	-	1	11.11%	1	.89%
2. Resource	1-Strongly agree	3	6.52%	1	3.85%	2	6.45%	0	-	6	5.36%
Management	2-Agree	15	32.61%	7	26.92%	8	25.81%	2	22.22%	32	28.57%
	3-Neutral	11	23.91%	2	7.69%	6	19.35%	4	44.44%	23	20.54%
	4-Disagree	12	26.09%	11	42.30%	11	35.48%	3	33.33%	37	33.04%
	5-Strongly disagree	5	10.87%	5	19.23%	4	12.90%	0	-	14	12.50%

Table 5 (continued)

Care Management Dimension	Response choices	CP		CA		MLC		HQ		Total Sample	
		n	Percent	*n*	Percent	*n*	Percent	*n*	Percent	*n*	Percent
3. Clinical Data	1-Strongly agree	0	-	0	-	1	3.23%	1	11.11%	2	1.79%
Management	2-Agree	9	19.57%	6	23.08%	10	32.26%	4	44.44%	29	25.90%
	3-Neutral	20	43.48%	6	23.08%	9	29.03%	1	11.11%	36	32.14%
	4-Disagree	15	32.61%	10	38.46%	9	29.03%	2	22.22%	36	32.14%
	5-Strongly disagree	2	4.35%	4	15.38%	2	6.45%	1	11.11%	9	8.04%
4. Non-Clinical	1-Strongly agree	0	-	0	-	0	-	0	-	0	-
Data	2-Agree	7	15.22%	5	19.23%	4	12.90%	2	22.22%	18	16.07%
Management	3-Neutral	23	50.00%	7	26.92%	10	32.26%	2	22.22%	42	37.50%
	4-Disagree	11	23.91%	11	42.30%	10	32.26%	3	33.33%	35	31.25%
	5-Strongly disagree	5	10.87%	3	11.54%	7	22.58%	2	22.22%	17	15.18%
5. Information	1-Strongly agree	2	4.35%	0	-	1	3.23%	2	22.22%	5	4.46%
Utility	2-Agree	14	30.43%	15	57.69%	11	35.48%	2	22.22%	42	37.50%
	3-Neutral	14	30.43%	2	7.69%	7	22.58%	1	11.11%	24	21.43%
	4-Disagree	13	28.26%	5	19.23%	11	35.48%	3	33.33%	32	28.57%
	5-Strongly disagree	3	6.52%	4	15.38%	1	3.23%	1	11.11%	9	8.04%

Table 5 (continued)

Care Management Dimension	Response choices	CP		CA		MLC		HQ		Total Sample	
		n	Percent	*n*	Percent	*n*	Percent	*n*	Percent	*n*	Percent
6. Prevention	1-Strongly agree	4	8.70%	1	3.85%	0	-	1	11.11%	6	5.36%
and/or Cure	2-Agree	22	47.83%	10	38.46%	6	19.53%	5	55.56%	43	38.39%
Focus	3-Neutral	11	23.91%	9	34.62%	14	45.16%	3	33.33%	37	33.04%
	4-Disagree	5	10.87%	5	19.23%	9	29.03%	0	-	19	16.96%
	5-Strongly disagree	4	8.70%	1	3.85%	2	6.45%	0	-	7	6.25%
7. Educational	1-Strongly agree	18	39.13%	7	26.92%	9	29.03%	0	-	34	30.36%
Interventions	2-Agree	20	43.48%	15	57.69%	16	51.61%	7	77.78%	58	51.79%
	3-Neutral	6	13.04%	4	15.38%	4	12.90%	2	22.22%	16	14.29%
	4-Disagree	2	4.35%	0	-	2	6.45%	0	-	4	3.57%
	5-Strongly disagree	0	-	0	-	0	-	0	-	0	-
8.Comprehensiveness	1-Strongly agree	6	13.04%	1	3.85%	1	3.23%	0	-	8	7.14%
	2-Agree	12	26.09%	9	34.62%	3	11.54%	2	22.22%	26	23.21%
	3-Neutral	9	19.57%	7	26.92%	15	48.39%	3	33.33%	34	30.36%
	4-Disagree	12	26.09%	8	30.77%	11	35.48%	3	33.33%	34	30.36%
	5-Strongly disagree	7	15.22%	1	3.85%	1	3.23%	1	11.11%	10	8.93%

Table 5 (continued)

Care Management Dimension	Response choices	CP *n*	CP Percent	CA *n*	CA Percent	MLC *n*	MLC Percent	HQ *n*	HQ Percent	Total Sample *n*	Total Sample Percent
9. Continuity	1-Strongly agree	6	13.04%	2	7.69%	3	11.54%	0	-	11	9.82%
of Care	2-Agree	23	50.00%	14	53.85%	15	48.39%	4	44.44%	56	50.00%
	3-Neutral	9	19.57%	5	19.23%	5	16.13%	3	33.33%	22	19.64%
	4-Disagree	8	17.39%	5	19.23%	5	16.13%	2	22.22%	20	17.86%
	5-Strongly disagree	0	-	0	-	3	9.68%	0	-	3	2.67%

Note. CP = Clinic providers, CA = Clinic administrators, MLC = Maintenance and Logistics Command, HQ = Coast Guard Headquarters

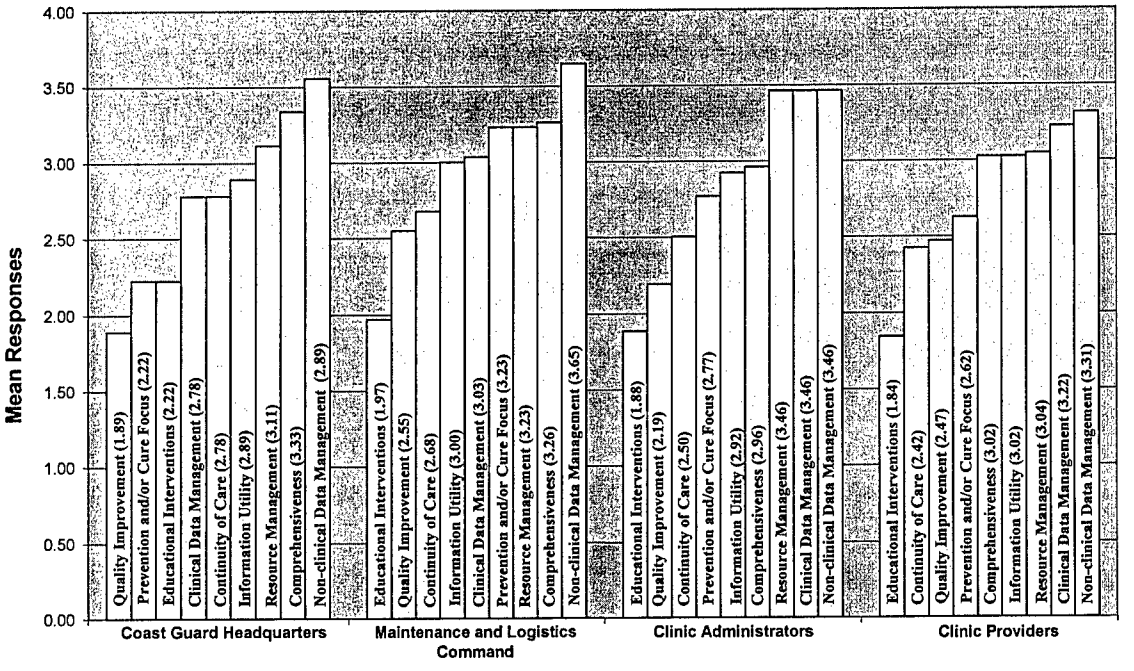


Figure 1. Care Management Dimension Rank, By Organizational Level. The Likert scale was quantified as follows: 1 - strongly agree, 2 - agree, 3 - neutral, 4 - disagree, and 5 - strongly disagree.

The following discussion highlights the salient points of the descriptive statistics from the survey:

1. Quality Improvement. For the care management dimension of Quality Improvement, a majority of the respondents in each category strongly agreed or agreed that the Coast Guard's QI Program improves the quality of care in Coast Guard Healthcare Facilities, led by clinic administrators at nearly 85%.
2. Resource Management. In analyzing the dimension of Resource Management, the level of variation for each response differed greatly among respondents. Approximately 44% of Coast Guard Headquarters respondents gave a neutral

response. Considering that there were only nine responses from Coast Guard Headquarters, one must also consider that a large percentage of clinic providers (23.95%) and MLC staff (19.35%) also offered neutral views. Clinic administrators were more decisive with only about 8% giving a response of neutral, with nearly 62% of clinic administrators disagreeing or strongly disagreeing that Coast Guard Healthcare Facilities have adequate personnel and financial resources to support Coast Guard missions.

3. Clinical Data Management. Only one respondent from Coast Guard Headquarters responded to the choice of neutral in the view that the Coast Guard's Medical Information System (MIS) has the ability to accurately report clinical information on illnesses and injuries encountered at all Coast Guard Healthcare Facilities. Conversely, approximately 56% of respondents from Coast Guard Headquarters agreed or strongly agreed with this statement. Clinic providers seemed less sure, with nearly 44% offering a neutral view.
4. Non-clinical Data Management. Exactly 50% of clinic providers responded to the view of neutral that the Coast Guard's Medical Information System (MIS) has the ability to accurately measure the cost of delivering healthcare at Coast Guard Healthcare Facilities. Interestingly, in studying all levels of the organization (with the exception of clinic providers), over 50% in each category either disagreed or strongly disagreed with the statement associated with the Non-clinical Data Management dimension.
5. Information Utility. Nearly 58% of clinic administrators agreed that the Coast Guard has the ability to develop its healthcare programs and policies based on

clinical data reported from Coast Guard Healthcare Facilities. All other levels were less than 50%.

6. Prevention and/or Cure Focus. Over 50% of clinic providers and Headquarters staff agreed or strongly agreed that the Coast Guard develops its healthcare programs based on scientifically proven medical practices. A high percentage of MLC staff (45.16%) was neutral in their responses.
7. Educational Interventions. A majority of the respondents at all four levels of the organization agreed or strongly agreed that educational initiatives such as smoking cessation and Work-Life programs can reduce healthcare problems among the Coast Guard's active duty population, led by clinic administrators at 84.61%.
8. Comprehensiveness. This dimension presented a large degree of variability in responses. Although 39.13% of clinic providers agreed or strongly agreed that the Coast Guard does a good job of keeping its healthcare providers abreast of knowledge on the best and current practices in delivering health care, 41.31% disagreed or strongly disagreed with this dimension. Similarly, nearly 39% of clinic administrators agreed or strongly agreed with this dimension and nearly 34% disagreed or strongly disagreed.
9. Continuity of Care. With the exception of Coast Guard Headquarters, a majority of stakeholders in all levels of the organization agree and strongly agree that the coordination between Coast Guard Healthcare Facilities and TRICARE encourages continuity of care for active duty members.

Comparisons and Differences Among Organizational Levels

In discussing comparisons and differences in results, alpha (α) probabilities were set at the $p = .05$ level to determine the likelihood that the results are due to chance. As observed in Tables 4 and 5, there were varying levels of responses shared by all organizational levels assessed. Table 6 demonstrates the correlation matrix for the entire sample.

Table 6.

Correlation Matrix for Survey Responses to Care Management Dimensions, Sample (N = 111)

Care Management Dimension	1	2	3	4	5	6	7	8	9
1. Quality Improvement	1.0000								
2. Resource Management	0.1778	1.0000							
3. Clinical Data Management	*0.3336	0.0248	1.0000						
4. Non-Clinical Data Management	*0.2570	0.0960	*0.3101	1.0000					
5. Information Utility	*0.4179	-0.1065	*0.5338	*0.4250	1.0000				
6. Prevention and/or Cure Focus	*0.4974	0.2020	0.2279	0.2962	*0.3422	1.0000			
7. Educational Interventions	0.0231	0.0913	0.1919	0.1072	0.1068	0.1066	1.0000		
8. Compre-hensiveness	*0.4236	0.1216	*0.3051	0.3320	*0.5157	*0.4830	0.1851	1.0000	
9. Continuity of Care	-0.0666	0.0140	0.1480	-0.0226	-0.0078	0.0492	0.2071	0.1143	1.0000

* $p < .05$

The greatest correlations for the sample appear to moderate at best, led by the correlation ($r = 0.5338$) between the dimensions of Clinical Data Management and Information Utility. The correlation between these dimensions implies a functional relationship, suggesting a shared attitude and perception towards the management of clinical data, a key construct of a care management program. The shared variance ($r^2 = .307$) for this correlation further strengthens the relationship because nearly 31% of the variance in one dimension accounts for the variance in the other, and vice versa. Other statistically significant correlations that suggest functional relationships include:

1. Quality Improvement and Prevention and/or Cure Focus ($r = 0.4974$). This relationship suggests that the dimension of Prevention and/or Cure Focus is viewed as an initiative of the Quality Improvement dimension by some respondents. A predominant theme of Prevention and/or Cure Focus is evidenced based medicine practices, which aligns with the Quality Improvement concept of continuous improvement, a key care management construct.
2. Non-Clinical Data Management and Information Utility ($r = 0.4250$). This generated a similar response to that of Clinical Data Management and Information Utility, suggesting that some components of the organization have a shared attitude and perception towards the management of non-clinical data, also a key construct of a care management program.
3. Quality Improvement and Information Utility ($r = 0.4179$). This relationship suggests that some individuals who agree that Quality Improvement improves healthcare delivery in Coast Guard healthcare facilities also see the

importance of using data to develop healthcare program and policies, and vice versa.

In reviewing other correlations that are statistically significant, similar inferences can be made toward suggesting shared attitudes and perceptions on care management dimensions relative to the strength of the correlation.

However, how Coast Guard Headquarters, MLC, clinic administrators, and clinic providers would fare in their views on care management dimensions would say something about how each organizational level might agree on these dimensions. Looking more closely at how some organizational layers compared against other layers could provide an even deeper insight into the attitudes and perceptions toward care management dimensions. Comparisons allow an observer to see similarities and differences in attitudes and perceptions towards care management dimensions between organizational layers.

Inter-organizational Comparisons. Table 7 demonstrates correlations that are statistically significant when comparing organizational layers. However, Table 7 differs from Table 6 in that Table 7 only correlates like care management dimensions against each other in order to assess attitudes and perceptions between organizational layers.

Table 7.

Inter-organizational Correlations for Survey Response to Care Management Dimensions

Organization Levels Assessed	*Care Management r	Dimension	*Care Management r	Dimension	*Care Management r	Dimension	*Care Management r	Dimension	*Care Management r	Dimension
CP, CA	0.543	5	0.488	4						
MLC, CP	-0.477	1								
MLC, CA	-0.310	9	0.266	5						
HQ, CP	-0.746	2	-0.598	6	-0.516	4	0.412	5	0.382	1
HQ, CA	-0.783	8	-0.650	6	0.623	2	0.512	3	-0.382	5
HQ, MLC	0.493	6	-0.377	7	-0.369	1	0.361	5		

Note. CP = Clinic providers, CA = Clinic administrators, MLC = Maintenance and Logistics Command, HQ = Coast Guard Headquarters. All coefficients listed are statistically significant, $p < .05$.

*Care management dimensions quantified as follows: 1 - Quality Improvement, 2 – Resource Management, 3 – Clinical Data Management, 4 – Non-clinical Data Management, 5 – Information Utility, 6 – Prevention and/or Cure Focus, 7 - Educational Interventions, 8 – Comprehensiveness, 9 – Continuity of Care.

The correlations suggest both inverse and positive functional relationships between organizational layers:

1. Information Utility (r = 0.543). Clinic administrators and clinic providers appear to be in some agreement in their views on the Coast Guard's ability to develop its healthcare programs and policies based on clinical data reported from Coast Guard Healthcare Facilities. Approximately 34% of both disagreed or strongly disagreed with this dimension.
2. Non-clinical Data Management (r = 0.488). Clinic administrators and clinic providers also appear to have some congruency regarding this dimension. Only 15.22% of clinic providers and 19.23% of clinic administrators believe that the Coast Guard's Medical Information System (MIS) has the ability to accurately measure the cost of delivering healthcare at Coast Guard Healthcare Facilities.
3. Quality Improvement (r = -0.477). Clinic providers and MLC appear to have different views with regard to the Quality Improvement dimension as evidenced by an inverse correlation. The direction of this relationship can be seen by observing response frequencies: where just over 50% of both clinic providers and MLC staff agree or strongly agree that the Coast Guard's QI program improves the quality of care in Coast Guard healthcare facilities, 21.92% of clinic providers offered a view of neutral on this dimension. Nearly double that amount (41.94%) of MLC staff offered a neutral choice.
4. Comprehensiveness (r = -0.371). This correlation indicates a divergent perspective between clinic administrators and MLC staff. This relationship can be seen by observing the frequencies of the responses for MLC staff and clinic administrators. The direction of the relationship can be seen in that

nearly 39% of clinic administrators who agree or strongly agree that the Coast Guard does a good job of keeping its healthcare providers abreast of knowledge on the best and current practices in delivering health care, whereas only about 14% of MLC staff takes the same position. There are also greater degrees of separation when observing the percentage of neutral choices between MLC staff and clinic administrators (26.92% versus 48.39%).

5. Non-clinical Data Management ($r = 0.266$). Over 50% MLC staff and clinic administrators either disagree or strongly disagree that the Coast Guard's Medical Information System (MIS) has the ability to accurately measure the cost of delivering healthcare at Coast Guard Healthcare Facilities. This congruency accounts for the positive direction of the correlation.

The remaining intercorrelations involve comparisons between Coast Guard Headquarters staff and clinic administrators, clinic providers, and MLC staff. Similar inferences can be made by looking at the direction of the functional relationships and observing the frequencies of responses to the care management dimensions. Results from all correlations are located in Appendix F.

While there were varying degrees of correlation among the organizational layers assessed, there were fewer statistically significant differences among the means of the responses given by the organizational levels surveyed. An one-way analysis of variance (ANOVA) was conducted to determine if perceptions and attitudes differed significantly among the different layers of the organization, as seen in Table 8. Table 8 reveals that the statistically significant differences were for the mean responses to the care management dimension of Quality Improvement and Prevention and/or Cure Focus.

Table 8

Analysis of Variance and F-Ratios for Differences in Mean Responses to Care Management Dimensions

Care Management Dimension	Organizational Levels Compared		*SS*	*df*	*MS*	*F*
Quality Improvement	MLC, HQ	Between Groups	3.033692	1	3.033692	*4.34
		Within Groups	26.56631	38	0.699113	
		Total	29.6			
Prevention and/or Cure Focus	MLC, HQ, CP, CA	Between Groups	9.969099	3	3.323033	*4.34
		Within Groups	98.30769	108	0.910256	
		Total	108.2768			
Prevention and/or Cure Focus	MLC, HQ	Between Groups	7.02509	1	7.02509	*10.69
		Within Groups	24.97491	38	0.657234	
		Total	32			
Prevention and/or Cure Focus	MLC, CP	Between Groups	6.564553	1	6.564553	*6.64
		Within Groups	74.13675	75	0.98849	
		Total	80.7013			

Note. CP = Clinic providers, CA = Clinic administrators, MLC = Maintenance and Logistics Command, HQ = Coast Guard Headquarters.

* $p < .05$

For the dimension of Quality Improvement, the differences in the mean scores between Coast Guard Headquarters and MLC were statistically significant, F (1,38) = 4.34, $p < .05$. Coast Guard Headquarters' mean score was 1.89 and MLC's mean score was 2.55. The dispersion around each mean score was also variable. The standard deviation for Coast Guard Headquarters was 1.36 and 0.62 for MLC. The evidence of variation can be seen by observing the weight of the response frequencies, with nearly

78% of Coast Guard Headquarters' staff either agreeing or strongly agreeing with the Quality Improvement dimension and 51% of MLC doing the same. However, the greatest divergence can be seen by observing the percentage of neutral responses: 41.94% for MLC and 11.11% for Coast Guard Headquarters. Such frequencies skew the mean responses, creating enough variation to produce statistical differences among the means.

The other dimension that produced statistically significant differences among the organizational layers was Prevention and/or Cure Focus. This difference was evident when testing all four organizational levels $F(3,108) = 4.34, p < .05$. As with the Quality Improvement dimension, the differences can be seen by observing both the frequencies of response and mean scores and standard deviations in Tables 4 and 5. One of the most significant differences can be seen by comparing the frequencies of clinic provider's responses to this dimension. Clinic providers were the only organizational layer to have over 50% of respondents either agree or strongly agree with this dimension. Clinic providers also had the smallest percentage of neutral responses to this dimension at 23.91%. Similar deductions can be made by looking at comparisons between MLC and Coast Guard Headquarters $F(1,38) = 10.69, p < .05$, and MLC and clinic providers $F(1,75) = 6.64, p < .05$.

Survey Limitations. The validity of this survey instrument is questionable because of the potential poor understanding of some statements on the survey by some respondents, despite efforts to make it applicable to all those who participated at all levels of the Health Services Program. A high percentage of neutral responses to some of the statements are indicative of this. To some degree, the survey instrument was designed to assess knowledge levels, which have some effect on one's perception (Daft, 2003). That

being said, the knowledge of current Coast Guard practices and systems as they relate to care management dimensions was assessed. This perception, influenced by knowledge, will influence one's attitude (Daft, 2003).

The organizational level in which an individual is employed will also shape their perception and attitude because of the organizational culture in which they work. The dynamics of each organizational level varies, as well as responsibilities. Further, where clinic providers and clinic administrators are more homogenous in their responsibilities, MLC and Coast Guard Headquarters staffs are much more heterogeneous in that their positions encompass many different types of expertise: providers, administrators, safety personnel, and other military and civilian staff, all of which would have key responsibilities in the Health Services Program.

Discussion

Despite the potential limitations presented by the survey instrument, it proved to be valuable in discussing several salient points:

1. There were two dimensions in which over 50% of respondents in all organizational levels either agreed or strongly agreed: Educational Interventions and Quality Improvement. These results suggest that Health Services Program stakeholders have favorable attitudes and perceptions towards these dimensions. Given that these two dimensions are a key constructs of a care management program, the Coast Guard Health Services Program already has some components in place for introducing a care management program that would likely have strong support and buy in from stakeholders.

2. The responses to all care management dimensions relating to information and data management also suggest a need for more information technology to capture activities that occur at Coast Guard healthcare facilities. Only 19.57% of clinic providers and 23.09% of clinic administrators agreed with the Clinical Data Management dimension, whereas a greater number held either a neutral response or disagreed or strongly disagreed with this dimension. There are several implications that may explain respondent perceptions and attitudes such as: a vague understanding of the survey statement or topic, unfamiliarity with the MIS capabilities, the perception that their clinical workload is not being measured or valued, as well as other implications. A moderate correlation ($r = 0.5338$) in the sample response between the dimensions of Clinical Data Management and Information Utility suggests shared perceptions and attitudes. Data management, both clinical and non-clinical, is the cornerstone of a care management program (Juhn et al., 1998).
3. Nearly 62% of clinic administrators disagreed or strongly disagreed with the Resource Management dimension, where less than 50% of the other organizational layers offered the same viewpoint. This response is not surprising considering the responsibilities inherent in a clinic administrator's job, which includes resource management (Coast Guard Medical Manual). Their perception suggests that clinic administrators, to some degree, believe that their human and financial resources are inadequate for supporting Coast Guard missions.

4. With the exception of clinic providers, over 50% of respondents in all other categories either disagreed or strongly disagreed with the Non-clinical Data Management dimension. There was a statistically significant relationship between clinic administrators' and clinic providers' perspectives on this dimension as evidenced through a Pearson product moment correlation (r = 0.488). Like the Clinical Data Management dimension, there are numerous deductions that can be made from the results. One consideration is that given the high percentage of neutral responses by clinic providers (50.00%), perhaps there is an indifference to clinical financial matters by providers. Lack of rudimentary knowledge and awareness on current financial states in Coast Guard healthcare facilities could lead to inefficiencies in resource management and business processes.
5. Numerous Pearson product moment correlations were discussed that demonstrate relationships between care management dimensions, both when analyzing the sample and when making comparisons between organizational layers. There was evidence of shared attitudes and perceptions in the sample and between organizational layers all dimensions.
6. There were also statistically significant differences in the means for two care management dimensions: Quality Improvement and Prevention and/or Cure Focus. The implications for Quality Improvement are uncertain when reviewing the percentages of neutral responses from MLC staff (41.94%) and Coast Guard Headquarter staff (11.11%). Perhaps because Coast Guard Headquarters Office of Health Services has the ultimate responsibility for

development and implementation of the Coast Guard's QI Program, this influenced the higher weighted averages in the agree and strongly agree categories. As noted during the literature review, MLCs carry out this policy and ensure compliance to the QI Program for units under their jurisdiction. The dimension of Prevention and/or Cure Focus also produced significant differences between MLCs, clinic administrators, clinic providers, and Coast Guard Headquarters. Only clinic providers and Coast Guard Headquarters had over 50% of their respondents agree or strongly agree with this dimension. Given clinic providers' roles in providing healthcare, the higher percentage responses in the agree and strongly agree categories suggests that providers' training and education has an influence on their responses.

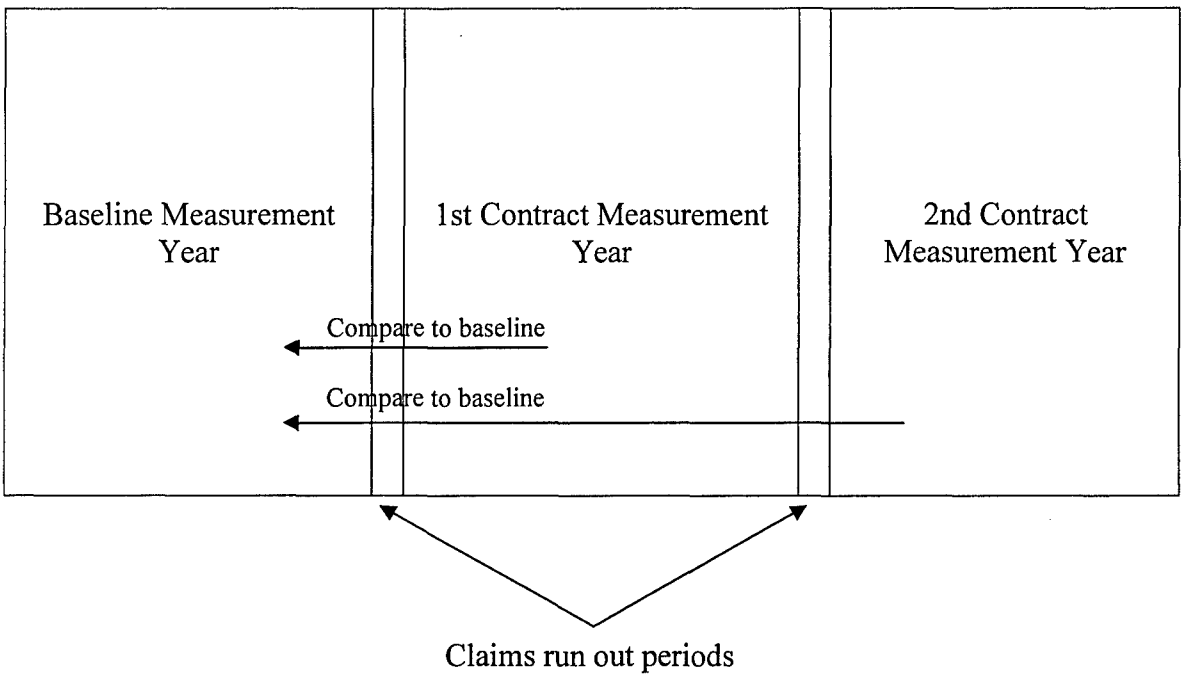
Conclusion

The feasibility of care management in Coast Guard healthcare facilities as perceived by Program stakeholders produced mix results. Contingency theory says that an organization attempts to find the right fit within its environment (Tosi & Slocum, 1984). In a post 9/11 environment, the Coast Guard Health Services Program is faced with finding the right fit in a dynamic and changing environment. Program stakeholders are a key part of this environment. The survey instrument used in this project answered the contingency theory model hypotheses of *the organizational culture of the Health Services Program shapes the environment in which it exists*. It did this by demonstrating the attitudes and perceptions of Coast Guard Health Services Program stakeholders toward the dimensions of care management.

The survey instrument revealed both congruencies in several care management dimensions while at the same time identifying several schisms in the Health Services Program's perceived capabilities among stakeholders. Most stakeholders agreed that the Coast Guard's QI Program improved the quality of care in Coast Guard healthcare facilities. Most also agreed that educational interventions such as Work-Life initiatives could be beneficial. However, it also demonstrated that stakeholders perceive that the ability of the Coast Guard to manage data, translate it into useful information, and use it to make decisions is limited, or even impossible in some aspects. The survey also revealed that the knowledge level at different levels of the organization varies on what the Coast Guard Health Services Program capabilities are. Given the differing attitudes and perceptions among Program stakeholders, a gradual and phased implementation of a care management program may be the path to follow, similar to the phased implementation suggested by Young and Barret (1997).

Critical to this endeavor is a reliable and valid IT infrastructure that should be able to capture both clinical and non-clinical data from Coast Guard healthcare facilities. The MIS is currently limited in its capabilities to do so. One must remember that data management is the cornerstone of a care management program (Juhn et al, 1998). The ability to make Coast Guard Health Services program and policy decisions, reliably and accurately measure and forecast healthcare costs in Coast Guard healthcare facilities, and improve population health is contingent upon data and information. A properly implemented care management program in Coast Guard healthcare facilities would accomplish this.

Appendix A. Conceptual Model of the Total Population Approach

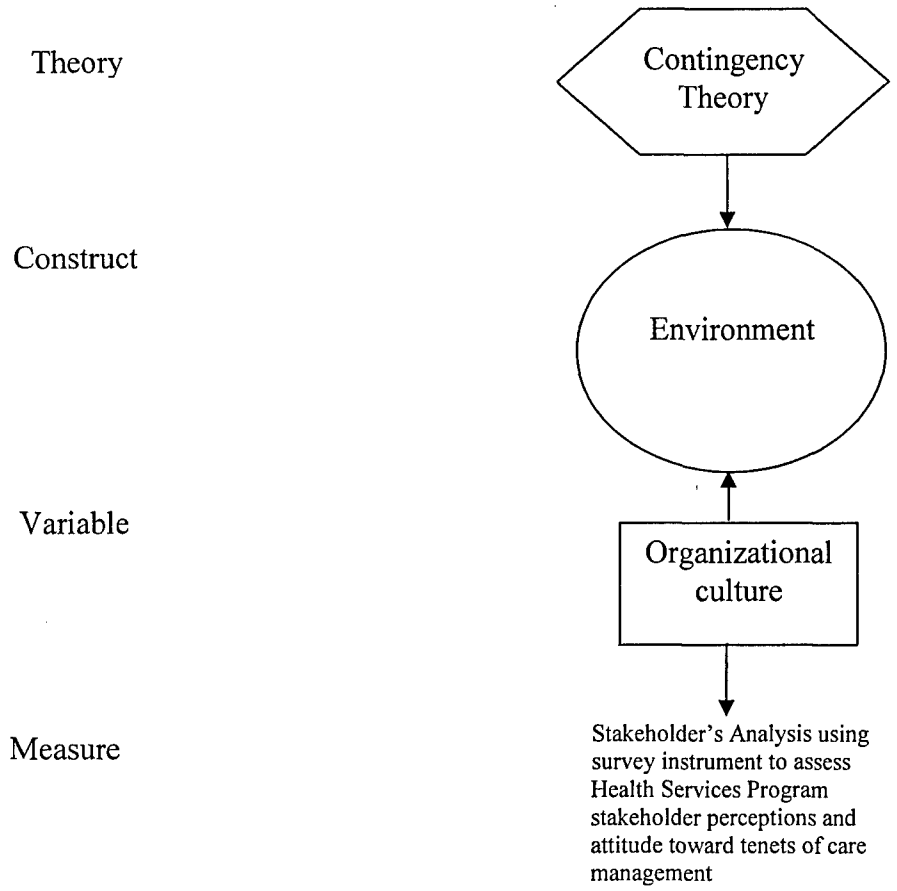


Appendix B. Coast Guard Healthcare Facilities with Medical Officers

Healthcare Facility Name	Location
Coast Guard Headquarters Clinic	Washington, D.C.
Coast Guard Academy Clinic	New London, Connecticut
U. S. Coast Guard Yard Clinic	Baltimore, Maryland
Coast Guard Integrated Support Command (ISC) Boston Clinic	Boston, Massachusetts
Coast Guard Air Station Cape Cod Clinic	Cape Cod, Massachusetts
Coast Guard Training Center Cape May Clinic	Cape May, New Jersey
Coast Guard Air Station Clearwater Clinic	Clearwater, Florida
Coast Guard Air Station Miami Clinic	Miami, Florida
Coast Guard ISC Miami Clinic	Miami, Florida
Coast Guard Support Center Elizabeth City Clinic	Elizabeth City, North Carolina
Coast Guard Support Center Portsmouth Clinic	Portsmouth, Virginia
Coast Guard Training Center Yorktown Clinic	Yorktown, Virginia
Coast Guard Group Galveston Clinic	Galveston, Texas
Coast Guard Aviation Training Center Mobile Clinic	Mobile, Alabama
Coast Guard ISC New Orleans Clinic	New Orleans, Louisiana
Coast Guard Air Station Bourinquen Clinic	Bourinquen, Puerto Rico
Coast Guard Air Station Traverse City Clinic	Traverse City, Michigan
Coast Guard ISC Alameda Clinic	Alameda, California

Healthcare Facility Name	Location
Coast Guard Training Center Petaluma Clinic	Petaluma, California
Coast Guard Air Station Humboldt Bay Clinic	McKinleyville, California
Coast Guard ISC San Pedro Clinic	San Pedro, California
Coast Guard Air Station Astoria Clinic	Astoria, Oregon
Coast Guard Air Station North Bend Clinic	North Bend, Oregon
Coast Guard Air Station Honolulu Clinic	Honolulu, Hawaii
Coast Guard ISC Juneau Clinic	Juneau, Alaska
Coast Guard ISC Ketchikan Clinic	Ketchikan, Alaska
Coast Guard ISC Kodiak Clinic	Kodiak, Alaska
Coast Guard Air Station Sitka Clinic	Sitka, Alaska
Coast Guard Air Station Port Angeles Clinic	Port Angeles, Washington
Coast Guard ISC Seattle Clinic	Seattle, Washington
Coast Guard Base San Juan Super Sickbay	San Juan, Puerto Rico
Coast Guard Group Charleston Super Sickbay	Charleston, South Carolina
Coast Guard Activities New York Super Sickbay	Staten Island, New York

Appendix C. Contingency Theory Model



Appendix D

Coast Guard Health and Safety Stakeholder Assessment

The purpose of this assessment is to evaluate the feasibility of a care management program for Coast Guard Healthcare Facilities. Care management is an approach to managing care that includes preventative services and well person care as a means to decrease the disease burden of a population, improve health, and decrease costs. The statements below relate to tenets of care management.

This information is being used for research purposes. Please do not disclose any personal identifying information with this assessment.

Please identify the title that best describes your position:

☐ Clinic Administrator at Coast Guard Healthcare Facility

☐ Clinic Provider at Coast Guard Healthcare Facility (Physician, Physician Assistant, Dentist, Nurse Practitioner, Pharmacist)

☐ Health and Safety Staff Member at Maintenance and Logistics Command Level

☐ Health and Safety Staff Member at Coast Guard Headquarters

☐ Other: _____

Please provide a response to the following statements with an "X" that best describes your view. The choice of "Neutral" indicates that you have no view either way on the issue being discussed.

1. The Coast Guard's Quality Improvement (QI) Program improves the quality of care in Coast Guard Healthcare Facilities.

☐	☐	☐	☐	☐
Strongly agree	Agree	Neutral	Disagree	Strongly disagree

2. Coast Guard Healthcare Facilities have adequate personnel and financial resources to support Coast Guard missions.

☐	☐	☐	☐	☐
Strongly agree	Agree	Neutral	Disagree	Strongly disagree

3. The Coast Guard's Medical Information System (MIS) has the ability to *accurately* report clinical information **on illnesses and injuries** encountered at all Coast Guard Healthcare Facilities.

☐ Strongly agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly disagree

4. The Coast Guard's Medical Information System (MIS) has the ability to *accurately* measure the **cost** of delivering healthcare at Coast Guard Healthcare Facilities.

☐ Strongly agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly disagree

5. The Coast Guard has the ability to develop its healthcare programs and policies based on clinical data reported from Coast Guard Healthcare Facilities.

☐ Strongly agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly disagree

6. The Coast Guard develops its healthcare programs based on scientifically proven medical practices.

☐ Strongly agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly disagree

7. Educational initiatives such as smoking cessation and Work-Life programs can reduce healthcare problems among the Coast Guard's active duty population.

☐ Strongly agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly disagree

8. The Coast Guard does a good job of keeping its healthcare providers abreast of knowledge on the best and current practices in delivering health care.

☐ Strongly agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly disagree

9. The coordination between Coast Guard Healthcare Facilities and TRICARE encourages continuity of care for active duty members.

☐ Strongly agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly disagree

Thank you for completing this assessment.

Table 1

Appendix E. Survey Responses and Microsoft Excel Descriptive Statistics

Maintenance and Logistics Command Individual Responses to Survey (n = 31)

	Responses								
Respondent Number	Survey Statement 1	Survey Statement 2	Survey Statement 3	Survey Statement 4	Survey Statement 5	Survey Statement 6	Survey Statement 7	Survey Statement 8	Survey Statement 9
1	2	5	5	5	4	4	3	4	3
2	2	2	2	4	4	2	2	4	2
3	2	4	2	2	2	3	2	4	2
4	2	4	4	4	2	3	2	2	4
5	3	2	3	3	3	4	2	4	2
6	2	4	3	3	3	2	3	2	2
7	2	4	3	3	2	3	2	3	3
8	3	4	1	5	2	5	3	3	2
9	2	2	4	4	4	3	2	3	3
10	3	1	5	5	5	3	1	3	2

Table 1 (continued)

Respondent Number	Survey Statement 1	Survey Statement 2	Survey Statement 3	Survey Statement 4	Survey Statement 5	Survey Statement 6	Survey Statement 7	Survey Statement 8	Survey Statement 9
11	3	3	2	5	3	2	1	3	1
12	2	4	3	3	1	2	4	2	5
13	2	4	2	4	2	4	2	3	4
14	3	2	4	4	4	3	2	4	1
15	3	1	3	3	3	4	2	4	5
16	3	3	4	4	4	3	2	3	2
17	2	4	3	3	3	3	2	3	2
18	3	3	2	2	2	4	1	4	5
19	2	2	3	5	2	2	1	3	2
20	2	3	3	3	2	3	1	3	3
21	2	3	4	4	3	3	1	3	2
22	3	5	2	2	2	3	3	4	2
23	3	5	4	4	4	4	2	4	4
24	2	4	2	3	3	3	2	3	4

Table 1 (continued)

Respondent Number	Survey Statement 1	Survey Statement 2	Survey Statement 3	Survey Statement 4	Survey Statement 5	Survey Statement 6	Survey Statement 7	Survey Statement 8	Survey Statement 9
25	4	5	3	5	4	4	1	5	2
26	3	3	2	3	2	3	2	3	2
27	3	2	2	5	4	5	1	4	1
28	4	4	4	4	4	4	4	4	3
29	2	2	4	3	4	4	2	3	4
30	2	2	2	2	2	2	1	1	2
31	3	4	4	4	4	3	2	3	2

Note. Survey Statement Numbers are those from the Coast Guard Health and Safety Assessment, Located In Appendix D

Table 2

Clinic Providers Individual Responses to Survey (n = 45)

	Responses								
Respondent Number	Survey Statement 1	Survey Statement 2	Survey Statement 3	Survey Statement 4	Survey Statement 5	Survey Statement 6	Survey Statement 7	Survey Statement 8	Survey Statement 9
1	2	4	2	3	2	2	1	2	3
2	4	5	4	5	5	5	1	5	2
3	4	4	4	4	4	4	2	4	2
4	4	5	4	5	5	5	1	5	2
5	2	3	3	3	2	3	1	2	2
6	2	3	2	4	4	4	2	4	2
7	3	2	4	4	4	3	2	3	3
8	1	3	3	3	2	2	1	2	2
9	2	4	2	3	2	1	1	2	2
10	2	4	4	4	4	2	2	2	4
11	2	3	5	5	4	2	3	2	2

Table 2 (continued)

Respondent Number	Survey Statement 1	Survey Statement 2	Survey Statement 3	Survey Statement 4	Survey Statement 5	Survey Statement 6	Survey Statement 7	Survey Statement 8	Survey Statement 9
12	2	3	3	3	3	2	2	2	2
13	3	2	3	3	3	2	1	2	1
14	2	2	4	2	4	2	4	4	2
15	3	2	3	3	3	4	4	4	2
16	3	4	3	2	2	2	1	3	4
17	3	3	3	4	4	3	2	5	2
18	2	4	4	3	3	3	2	4	4
19	2	3	2	3	3	2	2	3	3
20	4	5	3	3	3	2	2	3	3
21	2	2	3	2	2	2	2	1	1
22	1	2	2	3	3	1	1	1	2
23	3	3	3	3	2	4	2	3	1
24	4	3	4	4	3	5	2	3	4
25	2	2	4	2	4	4	2	5	4

Table 2 (continued)

Respondent Number	Survey Statement 1	Survey Statement 2	Survey Statement 3	Survey Statement 4	Survey Statement 5	Survey Statement 6	Survey Statement 7	Survey Statement 8	Survey Statement 9
26	3	1	2	5	4	2	3	5	3
27	2	3	3	3	3	3	2	3	2
28	2	2	3	2	2	3	1	1	2
29	4	5	5	5	5	5	3	5	2
30	3	4	3	3	1	2	1	2	2
31	2	2	4	3	3	3	2	4	2
32	3	1	3	3	4	2	1	3	3
33	4	4	4	4	4	3	1	4	1
34	4	2	4	3	3	2	1	4	4
35	4	4	3	4	3	3	3	3	1
36	1	1	4	3	4	2	3	4	4
37	3	4	3	4	4	3	2	4	4
38	2	4	4	3	2	2	2	4	3
39	1	2	3	4	2	1	1	1	2

Table 2 (continued)

Respondent Number	Survey Statement 1	Survey Statement 2	Survey Statement 3	Survey Statement 4	Survey Statement 5	Survey Statement 6	Survey Statement 7	Survey Statement 8	Survey Statement 9
40	1	2	2	2	1	2	1	2	1
41	1	2	2	2	2	1	2	1	2
42	2	5	3	3	3	2	2	5	2
43	2	4	4	4	2	2	3	2	2
44	1	3	2	3	2	2	1	1	3
45	2	2	3	3	2	2	2	2	3

Note. Survey Statement Numbers are those from the Coast Guard Health and Safety Assessment, Located In Appendix D

Table 3

Clinic Administrators Individual Responses to Survey (n = 26)

	Responses								
Respondent Number	Survey Statement 1	Survey Statement 2	Survey Statement 3	Survey Statement 4	Survey Statement 5	Survey Statement 6	Survey Statement 7	Survey Statement 8	Survey Statement 9
1	2	4	3	2	2	2	2	3	3
2	2	5	2	3	2	3	3	2	2
3	2	4	2	2	4	3	1	2	2
4	2	2	4	4	4	4	3	4	3
5	2	5	4	3	2	2	2	2	4
6	4	4	5	4	5	3	1	4	1
7	4	5	4	4	5	4	2	5	2
8	2	5	3	3	3	4	1	3	2
9	2	4	3	3	2	2	2	2	2
10	2	2	4	4	2	2	2	4	2
11	2	4	5	5	4	2	2	4	4

Table 3 (Continued)

Respondent Number	Survey Statement 1	Survey Statement 2	Survey Statement 3	Survey Statement 4	Survey Statement 5	Survey Statement 6	Survey Statement 7	Survey Statement 8	Survey Statement 9
12	3	4	5	4	2	3	3	4	3
13	2	4	3	3	2	1	1	3	2
14	2	2	4	5	5	3	1	4	2
15	2	2	4	4	3	3	2	2	4
16	2	4	2	4	2	3	2	2	3
17	2	3	4	5	4	2	3	1	2
18	1	1	2	2	2	2	1	2	1
19	1	5	3	3	2	4	2	3	2
20	2	4	2	2	2	2	1	3	2
21	2	4	4	4	2	3	2	2	4
22	2	4	3	2	2	2	2	3	2
23	2	2	2	3	2	3	2	2	3
24	2	2	4	4	4	2	2	4	4
25	4	3	5	4	2	5	2	4	2

Table 3 (continued)

Respondent Number	Survey Statement 1	Survey Statement 2	Survey Statement 3	Survey Statement 4	Survey Statement 5	Survey Statement 6	Survey Statement 7	Survey Statement 8	Survey Statement 9
26	2	2	4	4	5	3	2	3	2

Note. Survey Statement Numbers are those from the Coast Guard Health and Safety Assessment, Located In Appendix D

Table 4

Coast Guard Headquarters Individual Responses to Survey (n = 9)

	Responses								
Respondent Number	Survey Statement 1	Survey Statement 2	Survey Statement 3	Survey Statement 4	Survey Statement 5	Survey Statement 6	Survey Statement 7	Survey Statement 8	Survey Statement 9
1	2	3	3	3	3	3	2	3	3
2	1	3	5	3	5	2	3	5	3
3	2	2	2	4	4	2	3	4	4
4	5	2	4	2	4	2	2	2	2
5	1	4	2	4	2	3	2	3	2
6	1	4	1	5	1	1	2	3	2
7	1	4	2	2	2	2	2	2	2
8	1	3	2	5	1	2	2	4	3
9	3	3	4	4	4	3	2	4	4

Note. Survey Statement Numbers are those from the Coast Guard Health and Safety Assessment, Located In Appendix D

Table 5

Descriptive Statistics For Survey Reponses by Organizational Level

*Survey Statement	*M*	*SD*	Variance	Minimum	Maximum	Mode	Sum
			HQ *(n = 9)*				
1	1.89	1.29	1.86	1.00	5.00	1.00	17.00
2	3.11	0.74	0.61	2.00	4.00	3.00	28.00
3	2.78	1.23	1.69	1.00	5.00	2.00	25.00
4	3.56	1.07	1.28	2.00	5.00	4.00	32.00
5	2.89	1.37	2.11	1.00	5.00	4.00	26.00
6	2.22	0.63	0.44	1.00	3.00	2.00	20.00
7	2.22	0.42	0.19	2.00	3.00	2.00	20.00
8	3.33	0.94	1.00	2.00	5.00	3.00	30.00
9	2.78	0.79	0.69	2.00	4.00	2.00	25.00

Table 5 (continued)

*Survey Statement	*M*	*SD*	Variance	Minimum	Maximum	Mode	Sum
			MLC *(n = 31)*				
1	2.55	0.62	0.39	2.00	4.00	2.00	79.00
2	3.23	1.18	1.38	1.00	5.00	4.00	100.00
3	3.03	1.02	1.03	1.00	5.00	2.00	94.00
4	3.65	0.98	0.97	2.00	5.00	4.00	113.00
5	3.00	1.00	1.00	1.00	5.00	4.00	93.00
6	3.23	0.84	0.71	2.00	5.00	3.00	100.00
7	1.97	0.84	0.70	1.00	4.00	2.00	61.00
8	3.26	0.82	0.66	1.00	5.00	3.00	101.00
9	2.68	1.17	1.36	1.00	5.00	2.00	83.00

Table 5 (continued)

*Survey Statement	*M*	*SD*	Variance	Minimum	Maximum	Mode	Sum
			CP *(n = 45)*				
1	2.47	0.99	0.98	1.00	4.00	2.00	111.00
2	0.99	1.15	1.32	1.00	5.00	2.00	137.00
3	3.22	0.82	0.68	2.00	5.00	3.00	145.00
4	3.31	0.87	0.76	2.00	5.00	3.00	149.00
5	3.02	1.03	1.07	1.00	5.00	2.00	136.00
6	2.62	1.09	1.19	1.00	5.00	2.00	118.00
7	1.84	0.82	0.68	1.00	4.00	2.00	83.00
8	3.02	1.31	1.70	1.00	5.00	2.00	136.00
9	2.42	0.94	0.89	1.00	4.00	2.00	109.00

Table 5 (continued)

*Survey Statement	*M*	*SD*	Variance	Minimum	Maximum	Mode	Sum
			CA *(n = 26)*				
1	2.19	0.75	0.56	1.00	4.00	2.00	57.00
2	3.46	1.21	1.46	1.00	5.00	4.00	90.00
3	3.46	1.03	1.06	2.00	5.00	4.00	90.00
4	3.46	0.95	0.90	2.00	5.00	4.00	90.00
5	2.92	1.20	1.43	2.00	5.00	2.00	76.00
6	2.77	0.91	0.82	1.00	5.00	2.00	72.00
7	1.88	0.65	0.43	1.00	3.00	2.00	49.00
8	2.96	1.00	1.00	1.00	5.00	2.00	77.00
9	2.50	0.91	0.82	1.00	4.00	2.00	65.00

*Survey Statements are those from the Coast Guard Health and Safety Assessment, Located In Appendix D

Appendix F. Microsoft Excel Correlation Matrices for Health and Safety Survey

Note. CP = Clinic providers, CA = Clinic administrators, MLC = Maintenance and Logistics Command, HQ = Coast Guard Headquarters. Corresponding numbers next to organizational designator indicate that group's response to the appropriate survey statement. For example, HQ1 indicates Coast Guard Headquarters' response to Survey Statement 1. Survey Statements are those from the Coast Guard Health and Safety Assessment, Located In Appendix D

	HQ1	HQ2	HQ3	HQ4	HQ5	HQ6	HQ7	HQ8	HQ9	MLC1	MLC2	MLC3	MLC4	MLC5	MLC6	MLC7	MLC8	MLC9
HQ1	1.0000																	
HQ2	-0.6902	1.0000																
HQ3	0.4771	-0.4641	1.0000															
HQ4	-0.4413	0.2043	-0.5003	1.0000														
HQ5	0.4975	-0.6481	0.8445	-0.4905	1.0000													
HQ6	0.1680	-0.0533	0.3521	-0.1843	0.2868	1.0000												
HQ7	-0.1616	-0.4432	0.3146	-0.0279	0.6287	-0.1890	1.0000											
HQ8	-0.3360	-0.2132	0.3521	0.4792	0.3728	0.0625	0.6614	1.0000										
HQ9	0.0855	-0.5330	0.2945	0.2801	0.4932	0.3250	0.4914	0.7000	1.0000									
MLC1	-0.3694	0.2820	-0.3388	0.4737	-0.5419	0.2362	-0.2857	0.0945	-0.1890	1.0000								
MLC2	0.1171	-0.2043	-0.4342	-0.1196	-0.3467	-0.3133	-0.2229	-0.4792	-0.1474	0.0528	1.0000							
MLC3	0.5237	0.0000	0.2352	-0.4514	0.2107	0.4593	-0.4629	-0.5103	-0.1225	0.0237	-0.0621	1.0000						
MLC4	0.1527	-0.1066	0.4161	-0.0369	-0.0287	0.3125	-0.3780	0.1250	0.0500	0.2730	-0.0437	0.3116	1.0000					
MLC5	-0.1097	0.1915	0.4944	0.0662	0.3605	0.4490	0.0679	0.4490	0.2874	0.3740	-0.2269	0.5906	0.5077	1.0000				
MLC6	-0.0733	-0.0366	-0.2525	0.2149	-0.4230	0.4931	-0.4213	-0.0857	0.0686	0.4528	0.1148	-0.0088	0.2197	0.2367	1.0000			
MLC7	-0.3054	0.2132	-0.4481	0.5160	-0.6309	-0.2500	-0.3780	0.0000	-0.1000	0.0350	0.4488	0.0798	-0.1358	-0.1196	0.0578	1.0000		
MLC8	-0.4154	-0.0426	0.1664	-0.0147	0.3327	0.5750	0.5292	0.5000	0.4400	0.5645	0.1111	0.0299	0.2009	0.4089	0.5417	-0.0363	1.0000	
MLC9	0.8268	-0.3424	0.4112	-0.7272	0.3026	0.2294	-0.4336	-0.6309	-0.1835	-0.2070	0.1279	0.0935	-0.3353	-0.2859	0.1779	0.2626	-0.0849	1.0000

	CP1	CP2	CP3	CP4	CP5	CP6	CP7	CP8	CP9	CA1	CA2	CA3	CA4	CA5	CA6	CA7	CA8	CA9
CP1	1.0000																	
CP2	0.4258	1.0000																
CP3	0.4011	0.2332	1.0000															
CP4	0.4862	0.3743	0.3769	1.0000														
CP5	0.4770	0.1326	0.5018	0.6203	1.0000													
CP6	0.6012	0.3115	0.4463	0.4309	0.5299	1.0000												
CP7	0.0728	-0.0901	0.3223	0.1691	0.3210	0.1504	1.0000											
CP8	0.5241	0.2385	0.4112	0.3832	0.6858	0.5966	0.3184	1.0000										
CP9	0.0079	-0.0294	0.1718	-0.0215	0.1769	-0.0215	0.0377	0.2050	1.0000									
CA1	-0.0523	-0.2781	0.0653	0.0044	0.2720	0.2206	0.0357	0.1433	0.0390	1.0000								
CA2	-0.1807	0.0809	-0.2460	-0.0568	-0.2009	-0.2674	-0.4837	-0.3996	-0.2634	0.2074	1.0000							
CA3	-0.2984	-0.4861	0.1232	0.1398	0.2956	0.0423	0.3774	0.0188	-0.0221	0.5548	-0.0817	1.0000						
CA4	0.0036	-0.3699	0.3325	0.1517	0.3652	0.1163	0.5073	0.2520	-0.0240	0.3206	-0.2285	0.7162	1.0000					
CA5	0.2279	-0.3048	0.2118	0.4886	0.5430	0.2675	0.4938	0.4514	-0.0380	0.3292	-0.1958	0.4196	0.5259	1.0000				
CA6	-0.0263	-0.1361	0.1117	-0.0792	0.2494	0.3245	0.1177	0.4039	0.1287	0.4205	0.1010	0.2042	0.2216	0.2037	1.0000			
CA7	0.1855	0.1343	0.0416	0.3355	0.2379	0.2257	-0.1664	0.1608	-0.0398	0.0472	0.0195	0.2611	0.3481	-0.1142	0.1557	1.0000		
CA8	-0.1075	-0.1826	0.2918	0.1865	0.3885	0.0269	0.1800	-0.0592	0.2729	0.5445	-0.0178	0.5627	0.3151	0.3986	0.2984	-0.0684	1.0000	
CA9	0.1224	-0.1032	0.1820	-0.0469	-0.3251	0.1288	0.1278	-0.3291	-0.1864	-0.1474	0.0000	0.2576	0.2796	-0.1107	-0.0973	0.3722	-0.0663	1.0000

	MLC1	MLC2	MLC3	MLC4	MLC5	MLC6	MLC7	MLC8	MLC9	CA1	CA2	CA3	CA4	CA5	CA6	CA7	CA8	CA9
MLC1	1.0000																	
MLC2	0.0528	1.0000																
MLC3	0.0237	-0.0621	1.0000															
MLC4	0.2730	-0.0437	0.3116	1.0000														
MLC5	0.3740	-0.2269	0.5906	0.5077	1.0000													
MLC6	0.4528	0.1148	-0.0088	0.2197	0.2367	1.0000												
MLC7	0.0350	0.4488	0.0798	-0.1358	-0.1196	0.0578	1.0000											
MLC8	0.5645	0.1111	0.0299	0.2009	0.4089	0.5417	-0.0363	1.0000										
MLC9	-0.2070	0.1279	0.0935	-0.3353	-0.2859	0.1779	0.2626	-0.0849	1.0000									
CA1	0.0458	0.3788	0.0523	-0.0147	0.0310	-0.1204	0.2893	-0.1116	-0.0745	1.0000								
CA2	-0.3408	0.0641	-0.1949	0.1746	-0.1873	-0.2046	0.2338	-0.1212	-0.3848	0.2074	1.0000							
CA3	0.1334	0.0100	0.0762	0.1652	-0.0241	-0.2402	0.1237	-0.3007	-0.1237	0.5548	-0.0817	1.0000						
CA4	0.1447	-0.2015	0.1655	0.2657	0.2288	-0.3145	-0.0839	-0.3264	-0.2410	0.3206	-0.2285	0.7162	1.0000					
CA5	-0.1146	0.0733	-0.1965	-0.2287	-0.1760	-0.2424	0.1262	-0.2898	-0.2407	0.3292	-0.1958	0.4196	0.5259	1.0000				
CA6	0.2266	0.1421	0.0000	0.2669	-0.0751	-0.0043	-0.0131	0.0506	-0.1344	0.4205	0.1010	0.2042	0.2216	0.2037	1.0000			
CA7	-0.1576	-0.0040	0.2403	0.1230	0.1020	-0.3545	0.1493	-0.1729	0.1133	0.0472	0.0195	0.2611	0.3481	-0.1142	0.1557	1.0000		
CA8	0.0343	0.1782	0.0393	0.2316	-0.1256	-0.2473	0.1015	-0.3096	-0.0429	0.5445	-0.0178	0.5627	0.3151	0.3986	0.2984	-0.0684	1.0000	
CA9	0.0379	-0.1111	0.1733	0.1582	0.1112	0.0563	-0.0285	0.0000	0.1304	-0.1474	0.0000	0.2576	0.2796	-0.1107	-0.0973	0.3722	-0.0663	1.0000

	HQ1	HQ2	HQ3	HQ4	HQ5	HQ6	HQ7	HQ8	HQ9	CA1	CA2	CA3	CA4	CA5	CA6	CA7	CA8	CA9
HQ1	1.0000																	
HQ2	-0.6902	1.0000																
HQ3	0.4771	-0.4641	1.0000															
HQ4	-0.4413	0.2043	-0.5003	1.0000														
HQ5	0.4975	-0.6481	0.8445	-0.4905	1.0000													
HQ6	0.1680	-0.0533	0.3521	-0.1843	0.2868	1.0000												
HQ7	-0.1616	-0.4432	0.3146	-0.0279	0.6287	-0.1890	1.0000											
HQ8	-0.3360	-0.2132	0.3521	0.4792	0.3728	0.0625	0.6614	1.0000										
HQ9	0.0855	-0.5330	0.2945	0.2801	0.4932	0.3250	0.4914	0.7000	1.0000									
CA1	-0.3694	0.6447	-0.5565	-0.0279	-0.5419	-0.6142	-0.2857	-0.4725	-0.5292	1.0000								
CA2	-0.9219	0.6216	-0.2525	0.3287	-0.3344	0.1072	0.1621	0.4287	0.0686	0.2074	1.0000							
CA3	0.0305	0.5863	-0.5121	0.0369	-0.6596	-0.3125	-0.7559	-0.7500	-0.8000	0.5548	-0.0817	1.0000						
CA4	0.1302	0.3864	-0.0955	-0.2200	-0.3179	-0.5330	-0.4432	-0.5330	-0.7249	0.3206	-0.2285	0.7162	1.0000					
CA5	0.0156	0.0955	-0.5574	-0.0944	-0.3819	-0.7842	-0.0968	-0.5442	-0.4097	0.3292	-0.1958	0.4196	0.5259	1.0000				
CA6	0.1058	-0.1846	-0.1109	-0.2554	-0.1987	-0.6495	0.0000	-0.2887	-0.3464	0.4205	0.1010	0.2042	0.2216	0.2037	1.0000			
CA7	0.4558	-0.1818	0.8326	-0.7702	0.6481	0.2932	0.0806	-0.1066	-0.2345	0.0472	0.0195	0.2611	0.3481	-0.1142	0.1557	1.0000		
CA8	0.0820	0.2860	-0.3436	-0.3956	-0.4617	-0.5031	-0.5071	-0.7826	-0.6708	0.5445	-0.0178	0.5627	0.3151	0.3986	0.2984	-0.0684	1.0000	
CA9	0.2469	-0.0615	0.1848	-0.3405	0.1325	0.7217	-0.2182	-0.2887	-0.2309	-0.1474	0.0000	0.2576	0.2796	-0.1107	-0.0973	0.3722	-0.0663	1.0000

	MLC1	MLC2	MLC3	MLC4	MLC5	MLC6	MLC7	MLC8	MLC9	CP1	CP2	CP3	CP4	CP5	CP6	CP7	CP8	CP9
MLC1	1.0000																	
MLC2	0.0528	1.0000																
MLC3	0.0237	-0.0621	1.0000															
MLC4	0.2730	-0.0437	0.3116	1.0000														
MLC5	0.3740	-0.2269	0.5906	0.5077	1.0000													
MLC6	0.4528	0.1148	-0.0088	0.2197	0.2367	1.0000												
MLC7	0.0350	0.4488	0.0798	-0.1358	-0.1196	0.0578	1.0000											
MLC8	0.5645	0.1111	0.0299	0.2009	0.4089	0.5417	-0.0363	1.0000										
MLC9	-0.2070	0.1279	0.0935	-0.3353	-0.2859	0.1779	0.2626	-0.0849	1.0000									
CP1	-0.4747	-0.0981	-0.0215	-0.3290	-0.0752	-0.1810	-0.1989	-0.1682	0.3165	1.0000								
CP2	-0.4516	-0.2322	0.1469	-0.0492	0.0919	-0.1416	-0.1786	-0.2268	0.1654	0.4258	1.0000							
CP3	0.1008	-0.1263	-0.0099	0.0332	0.1949	0.0089	-0.3144	0.0926	0.0529	0.4011	0.2332	1.0000						
CP4	-0.3953	-0.1040	-0.2194	-0.1459	-0.1403	-0.3106	-0.0690	-0.2942	0.0466	0.4862	0.3743	0.3769	1.0000					
CP5	-0.1414	-0.0583	-0.0368	-0.0074	0.0322	-0.2334	-0.1093	0.0675	-0.0383	0.4770	0.1326	0.5018	0.6203	1.0000				
CP6	-0.0821	0.0700	-0.0243	-0.1272	0.1701	0.0974	-0.0044	0.1402	0.3090	0.6012	0.3115	0.4463	0.4309	0.5299	1.0000			
CP7	0.1385	-0.3385	0.0438	-0.0568	0.0788	-0.0511	-0.2417	0.1465	0.0240	0.0728	-0.0901	0.3223	0.1691	0.3210	0.1504	1.0000		
CP8	-0.0676	-0.0584	-0.0529	-0.1285	0.0769	-0.0509	-0.2117	0.1015	0.0653	0.5241	0.2385	0.4112	0.3832	0.6858	0.5966	0.3184	1.0000	
CP9	0.2071	-0.0550	0.0600	0.0483	0.1133	-0.0317	-0.2536	0.1345	0.0282	0.0079	-0.0294	0.1718	-0.0215	0.1769	-0.0215	0.0377	0.2050	1.0000

	HQ1	HQ2	HQ3	HQ4	HQ5	HQ6	HQ7	HQ8	HQ9	CP1	CP2	CP3	CP4	CP5	CP6	CP7	CP8	CP9
HQ1	1.0000																	
HQ2	-0.6902	1.0000																
HQ3	0.4771	-0.4641	1.0000															
HQ4	-0.4413	0.2043	-0.5003	1.0000														
HQ5	0.4975	-0.6481	0.8445	-0.4905	1.0000													
HQ6	0.1680	-0.0533	0.3521	-0.1843	0.2868	1.0000												
HQ7	-0.1616	-0.4432	0.3146	-0.0279	0.6287	-0.1890	1.0000											
HQ8	-0.3360	-0.2132	0.3521	0.4792	0.3728	0.0625	0.6614	1.0000										
HQ9	0.0855	-0.5330	0.2945	0.2801	0.4932	0.3250	0.4914	0.7000	1.0000									
CP1	0.3825	-0.5244	0.4581	-0.6264	0.7438	-0.2236	0.6761	0.0000	0.0447	1.0000								
CP2	0.6108	-0.7462	0.8002	-0.2580	0.8316	0.1250	0.4725	0.3750	0.3500	0.4258	1.0000							
CP3	0.1097	-0.3638	0.2300	-0.5429	0.3811	-0.2470	0.5431	-0.0449	-0.1257	0.4011	0.2332	1.0000						
CP4	0.3054	-0.3411	0.4097	-0.5160	0.4932	-0.5750	0.4914	-0.0500	-0.2600	0.4862	0.3743	0.3769	1.0000					
CP5	0.2309	-0.2820	0.2662	-0.4737	0.4119	-0.6614	0.5000	-0.0945	-0.2646	0.4770	0.1326	0.5018	0.6203	1.0000				
CP6	0.1460	-0.2548	0.1683	-0.3260	0.3222	-0.5976	0.5195	-0.0598	-0.3825	0.6012	0.3115	0.4463	0.4309	0.5299	1.0000			
CP7	-0.3054	0.2132	-0.6402	0.0737	-0.2868	-0.6250	0.1890	-0.2500	-0.1000	0.0728	-0.0901	0.3223	0.1691	0.3210	0.1504	1.0000		
CP8	0.2972	-0.3958	0.3279	-0.3492	0.4773	-0.6402	0.5565	0.0320	-0.1793	0.5241	0.2385	0.4112	0.3832	0.6858	0.5966	0.3184	1.0000	
CP9	-0.1616	0.2820	-0.1210	-0.5294	-0.1517	0.2362	-0.2857	-0.4725	-0.1890	0.0079	-0.0294	0.1718	-0.0215	0.1769	-0.0215	0.0377	0.2050	1.0000

	HQ1	HQ2	HQ3	HQ4	HQ5	HQ6	HQ7	HQ8	HQ9	MLC1	MLC2	MLC3	MLC4	MLC5	MLC6	MLC7	MLC8	MLC9
HQ1	1.0000																	
HQ2	-0.6902	1.0000																
HQ3	0.4771	-0.4641	1.0000															
HQ4	-0.4413	0.2043	-0.5003	1.0000														
HQ5	0.4975	-0.6481	0.8445	-0.4905	1.0000													
HQ6	0.1680	-0.0533	0.3521	-0.1843	0.2868	1.0000												
HQ7	-0.1616	-0.4432	0.3146	-0.0279	0.6287	-0.1890	1.0000											
HQ8	-0.3360	-0.2132	0.3521	0.4792	0.3728	0.0625	0.6614	1.0000										
HQ9	0.0855	-0.5330	0.2945	0.2801	0.4932	0.3250	0.4914	0.7000	1.0000									
MLC1	-0.3694	0.2820	-0.3388	0.4737	-0.5419	0.2362	-0.2857	0.0945	-0.1890	1.0000								
MLC2	0.1171	-0.2043	-0.4342	-0.1196	-0.3467	-0.3133	-0.2229	-0.4792	-0.1474	0.0528	1.0000							
MLC3	0.5237	0.0000	0.2352	-0.4514	0.2107	0.4593	-0.4629	-0.5103	-0.1225	0.0237	-0.0621	1.0000						
MLC4	0.1527	-0.1066	0.4161	-0.0369	-0.0287	0.3125	-0.3780	0.1250	0.0500	0.2730	-0.0437	0.3116	1.0000					
MLC5	-0.1097	0.1915	0.4944	0.0662	0.3605	0.4490	0.0679	0.4490	0.2874	0.3740	-0.2269	0.5906	0.5077	1.0000				
MLC6	-0.0733	-0.0366	-0.2525	0.2149	-0.4230	0.4931	-0.4213	-0.0857	0.0686	0.4528	0.1148	-0.0088	0.2197	0.2367	1.0000			
MLC7	-0.3054	0.2132	-0.4481	0.5160	-0.6309	-0.2500	-0.3780	0.0000	-0.1000	0.0350	0.4488	0.0798	-0.1358	-0.1196	0.0578	1.0000		
MLC8	-0.4154	-0.0426	0.1664	-0.0147	0.3327	0.5750	0.5292	0.5000	0.4400	0.5645	0.1111	0.0299	0.2009	0.4089	0.5417	-0.0363	1.0000	
MLC9	0.8268	-0.3424	0.4112	-0.7272	0.3026	0.2294	-0.4336	-0.6309	-0.1835	-0.2070	0.1279	0.0935	-0.3353	-0.2859	0.1779	0.2626	-0.0849	1.0000

Appendix G. Microsoft Excel Health and Safety Survey Organizational Level Analysis of Variance

Survey Statement 1

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Coast Guard HQ	9	17	1.888889	1.861111
MLC	31	79	2.548387	0.389247
Clinic Providers	46	113	2.456522	0.964734
Clinic Administrators	26	57	2.192308	0.561538

Survey Statement 1

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	4.232187	3	1.410729	1.81341	0.149038	2.688691
Within Groups	84.01781	108	0.777943			
Total	88.25	111				

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Coast Guard HQ	9	17	1.888889	1.861111
MLC	31	79	2.548387	0.389247

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	3.033692	1	3.033692	4.339342	0.044021	4.098172
Within Groups	26.56631	38	0.699113			
Total	29.6	39				

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
MLC	31	79	2.548387	0.389247
Clinic Providers	46	113	2.456522	0.964734

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.15629	1	0.15629	0.212773	0.645937	3.968471
Within Groups	55.09046	75	0.73454			
Total	55.24675	76				

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
MLC	31	79	2.548387	0.389247
Clinic Administrators	26	57	2.192308	0.561538

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	1.792891	1	1.792891	3.834557	0.055286	4.016195
Within Groups	25.71588	55	0.467561			
Total	27.50877	56				

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Clinic Providers	46	113	2.456522	0.964734
Clinic Administrators	26	57	2.192308	0.561538

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	1.159606	1	1.159606	1.412886	0.238595	3.977779
Within Groups	57.45151	70	0.820736			
Total	58.61111	71				

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Coast Guard HQ	9	17	1.888889	1.861111
Clinic Providers	46	113	2.456522	0.964734

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	2.42534	1	2.42534	2.204782	0.143507	4.023017
Within Groups	58.30193	53	1.100036			
Total	60.72727	54				

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Coast Guard HQ	9	17	1.888889	1.861111
Clinic Administrators	26	57	2.192308	0.561538

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.615507	1	0.615507	0.702163	0.408086	4.139252
Within Groups	28.92735	33	0.876586			
Total	29.54286	34				

Survey Statement 2

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Coast Guard HQ	9	28	3.111111	0.611111
MLC	31	100	3.225806	1.380645
Clinic Providers	46	139	3.021739	1.310628
Clinic Administrators	26	90	3.461538	1.458462

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	3.314457	3	1.104819	0.841778	0.473892	2.688691
Within Groups	141.748	108	1.312482			
Total	145.0625	111				

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Coast Guard HQ	9	28	3.1111111	0.6111111
MLC	31	100	3.2258065	1.3806452

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.0917563	1	0.0917563	0.0752941	0.7852652	4.0981717
Within Groups	46.308244	38	1.218638			
Total	46.4	39				

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
MLC	31	100	3.2258065	1.3806452
Clinic Providers	46	139	3.0217391	1.310628

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.7712155	1	0.7712155	0.5761208	0.4502158	3.9684709
Within Groups	100.39762	75	1.3386349			
Total	101.16883	76				

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
MLC	31	100	3.2258065	1.3806452
Clinic Administrators	26	90	3.4615385	1.4584615

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.7857734	1	0.7857734	0.5549183	0.4594864	4.0161954
Within Groups	77.880893	55	1.4160162			
Total	78.666667	56				

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Cliic Administrators	26	90	3.4615385	1.4584615
Clinic Providers	46	139	3.0217391	1.310628

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	3.2129784	1	3.2129784	2.3565482	0.1292658	3.9777793
Within Groups	95.439799	70	1.3634257			
Total	98.652778	71				

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Coast Guard HQ	9	28	3.1111111	0.6111111
Cliic Administrators	26	90	3.4615385	1.4584615

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.8210012	1	0.8210012	0.6552058	0.4240558	4.1392525
Within Groups	41.350427	33	1.2530433			
Total	42.171429	34				

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Coast Guard HQ	9	28	3.1111111	0.6111111
Clinic Providers	46	139	3.0217391	1.310628

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.060123	1	0.060123	0.0498929	0.8241085	4.0230168
Within Groups	63.86715	53	1.2050406			
Total	63.927273	54				

Survey Statement 3

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Coast Guard HQ	9	25	2.7777778	1.6944444
MLC	31	94	3.0322581	1.0322581
Clinic Providers	46	148	3.2173913	0.6628019
Clinic Administrators	26	90	3.4615385	1.0584615

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	4.2515771	3	1.4171924	1.5182559	0.2139155	2.6886915
Within Groups	100.81092	108	0.9334345			
Total	105.0625	111				

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Coast Guard HQ	9	25	2.7777778	1.6944444
MLC	31	94	3.0322581	1.0322581

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.4517025	1	0.4517025	0.3855217	0.5383696	4.0981717
Within Groups	44.523297	38	1.1716657			
Total	44.975	39				

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
MLC	31	94	3.0322581	1.0322581
Clinic Providers	46	148	3.2173913	0.6628019

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.6347425	1	0.6347425	0.7830678	0.3790328	3.9684709
Within Groups	60.793829	75	0.8105844			
Total	61.428571	76				

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
MLC	31	94	3.0322581	1.0322581
Cliic Administrators	26	90	3.4615385	1.0584615

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	2.6058073	1	2.6058073	2.4955807	0.1199008	4.0161954
Within Groups	57.42928	55	1.0441687			
Total	60.035088	56				

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Clinic Providers	46	148	3.2173913	0.6628019
Clinic Administrators	26	90	3.4615385	1.0584615

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.9901524	1	0.9901524	1.2313659	0.2709392	3.9777793
Within Groups	56.287625	70	0.8041089			
Total	57.277778	71				

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Coast Guard HQ	9	25	2.7777778	1.6944444
Clinic Administrators	26	90	3.4615385	1.0584615

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	3.1257631	1	3.1257631	2.577653	0.1179108	4.1392525
Within Groups	40.017094	33	1.2126392			
Total	43.142857	34				

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Coast Guard HQ	9	25	2.7777778	1.6944444
Clinic Providers	46	148	3.2173913	0.6628019

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	1.4547211	1	1.4547211	1.7772545	0.1881891	4.0230168
Within Groups	43.381643	53	0.8185216			
Total	44.836364	54				

Survey Statement 4

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Coast Guard HQ	9	32	3.5555556	1.2777778
MLC	31	113	3.6451613	0.9698925
Clinic Providers	46	152	3.3043478	0.7497585
Clinic Administrators	26	90	3.4615385	0.8984615

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	2.2571204	3	0.7523735	0.8506765	0.4691861	2.6886915
Within Groups	95.519665	108	0.8844413			
Total	97.776786	111				

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Coast Guard HQ	9	32	3.5555556	1.2777778
MLC	31	113	3.6451613	0.9698925

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.0560036	1	0.0560036	0.0541249	0.8172836	4.0981717
Within Groups	39.318996	38	1.0347104			
Total	39.375	39				

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
MLC	31	113	3.6451613	0.9698925
Clinic Providers	46	152	3.3043478	0.7497585

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	2.1511084	1	2.1511084	2.5675309	0.1132815	3.9684709
Within Groups	62.835905	75	0.8378121			
Total	64.987013	76				

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
MLC	31	113	3.6451613	0.9698925
Clinic Administrators	26	90	3.4615385	0.8984615

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.4767751	1	0.4767751	0.5086014	0.4787601	4.0161954
Within Groups	51.558313	55	0.9374239			
Total	52.035088	56				

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Clinic Providers	46	152	3.3043478	0.7497585
Clinic Administrators	26	90	3.4615385	0.8984615

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.4104422	1	0.4104422	0.5112209	0.4769888	3.9777793
Within Groups	56.200669	70	0.8028667			
Total	56.611111	71				

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Coast Guard HQ	9	32	3.5555556	1.2777778
Clinic Administrators	26	90	3.4615385	0.8984615

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.0590965	1	0.0590965	0.0596683	0.8085334	4.1392525
Within Groups	32.683761	33	0.990417			
Total	32.742857	34				

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Coast Guard HQ	9	32	3.5555556	1.2777778
Clinic Providers	46	152	3.3043478	0.7497585

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.475011	1	0.475011	0.5726753	0.4525488	4.0230168
Within Groups	43.961353	53	0.8294595			
Total	44.436364	54				

Survey Statement 5

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Coast Guard HQ	9	26	2.8888889	2.1111111
MLC	31	93	3	1
Clinic Providers	46	139	3.0217391	1.0439614
Clinic Administrators	26	76	2.9230769	1.4338462

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.2509821	3	0.0836607	0.0696564	0.9760035	2.6886915
Within Groups	129.7133	108	1.2010491			
Total	129.96429	111				

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Coast Guard HQ	9	26	2.8888889	2.1111111
MLC	31	93	3	1

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.0861111	1	0.0861111	0.0697867	0.793075	4.0981717
Within Groups	46.888889	38	1.2339181			
Total	46.975	39				

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
MLC	31	93	3	1
Clinic Providers	46	139	3.0217391	1.0439614

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.0087521	1	0.0087521	0.0085272	0.9266719	3.9684709
Within Groups	76.978261	75	1.0263768			
Total	76.987013	76				

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
MLC	31	93	3	1
Clinic Administrators	26	76	2.9230769	1.4338462

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.0836707	1	0.0836707	0.0698885	0.7924873	4.0161954
Within Groups	65.846154	55	1.1972028			
Total	65.929825	56				

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Clinic Providers	46	139	3.0217391	1.0439614
Clinic Administrators	26	76	2.9230769	1.4338462

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.1616964	1	0.1616964	0.1366596	0.7127407	3.9777793
Within Groups	82.824415	70	1.1832059			
Total	82.986111	71				

Anova: Single Factor HQ5,CA5

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Coast Guard HQ	9	26	2.8888889	2.1111111
Clinic Administrators	26	76	2.9230769	1.4338462

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.0078144	1	0.0078144	0.00489	0.9446725	4.1392525
Within Groups	52.735043	33	1.5980316			
Total	52.742857	34				

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Coast Guard HQ	9	26	2.8888889	2.1111111
Clinic Providers	46	139	3.0217391	1.0439614

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.1328502	1	0.1328502	0.1102455	0.7411744	4.0230168
Within Groups	63.86715	53	1.2050406			
Total	64	54				

Survey Statement 6

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Coast Guard HQ	9	20	2.2222222	0.4444444
MLC	31	100	3.2258065	0.7139785
Clinic Providers	46	121	2.6304348	1.1714976
Clinic Administrators	26	72	2.7692308	0.8246154

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	9.9690994	3	3.3230331	3.6506563	0.0149021	2.6886915
Within Groups	98.307686	108	0.9102564			
Total	108.27679	111				

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Coast Guard HQ	9	20	2.2222222	0.4444444
MLC	31	100	3.2258065	0.7139785

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	7.0250896	1	7.0250896	10.688863	0.0022937	4.0981717
Within Groups	24.97491	38	0.6572345			
Total	32	39				

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
MLC	31	100	3.2258065	0.7139785
Clinic Providers	46	121	2.6304348	1.1714976

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	6.5645526	1	6.5645526	6.6409907	0.0119298	3.9684709
Within Groups	74.136746	75	0.9884899			
Total	80.701299	76				

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
MLC	31	100	3.2258065	0.7139785
Clinic Administrators	26	72	2.7692308	0.8246154

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	2.9477167	1	2.9477167	3.856915	0.0546037	4.0161954
Within Groups	42.034739	55	0.764268			
Total	44.982456	56				

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Clinic Providers	46	121	2.6304348	1.1714976
Clinic Administrators	26	72	2.7692308	0.8246154

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.3200019	1	0.3200019	0.3054586	0.5822411	3.9777793
Within Groups	73.332776	70	1.0476111			
Total	73.652778	71				

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Coast Guard HQ	9	20	2.2222222	0.4444444
Clinic Administrators	26	72	2.7692308	0.8246154

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	2.0004884	1	2.0004884	2.7312184	0.1078887	4.1392525
Within Groups	24.17094	33	0.7324527			
Total	26.171429	34				

Anova: Single Factor HQ6,CP6

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Coast Guard HQ	9	20	2.2222222	0.4444444
Clinic Providers	46	121	2.6304348	1.1714976

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	1.2543259	1	1.2543259	1.1813718	0.2819955	4.0230168
Within Groups	56.272947	53	1.0617537			
Total	57.527273	54				

Survey Statement 7

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Coast Guard HQ	9	20	2.2222222	0.1944444
MLC	31	61	1.9677419	0.6989247
Clinic Providers	46	84	1.826087	0.6801932
Clinic Administrators	26	49	1.8846154	0.4261538

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	1.3213036	3	0.4404345	0.7457287	0.527134	2.6886915
Within Groups	63.785839	108	0.5906096			
Total	65.107143	111				

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Coast Guard HQ	9	20	2.2222222	0.1944444
MLC	31	61	1.9677419	0.6989247

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.4517025	1	0.4517025	0.7620863	0.3881596	4.0981717
Within Groups	22.523297	38	0.5927184			
Total	22.975	39				

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
MLC	31	61	1.9677419	0.6989247
Clinic Providers	46	84	1.826087	0.6801932

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.3716144	1	0.3716144	0.5403839	0.4645662	3.9684709
Within Groups	51.576438	75	0.6876858			
Total	51.948052	76				

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
MLC	31	61	1.9677419	0.6989247
Clinic Administrators	26	49	1.8846154	0.4261538

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.0977102	1	0.0977102	0.169949	0.6817595	4.0161954
Within Groups	31.621588	55	0.574938			
Total	31.719298	56				

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Clinic Providers	46	84	1.826087	0.6801932
Clinic Administrators	26	49	1.8846154	0.4261538

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.0569026	1	0.0569026	0.0965327	0.7569542	3.9777793
Within Groups	41.262542	70	0.5894649			
Total	41.319444	71				

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Clinic Administrators	26	49	1.8846154	0.4261538
Coast Guard HQ	9	20	2.2222222	0.1944444

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.7620269	1	0.7620269	2.059633	0.1606573	4.1392525
Within Groups	12.209402	33	0.3699819			
Total	12.971429	34				

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Coast Guard HQ	9	20	2.2222222	0.1944444
Clinic Providers	46	84	1.826087	0.6801932

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	1.1812033	1	1.1812033	1.9463776	0.1687968	4.0230168
Within Groups	32.164251	53	0.6068727			
Total	33.345455	54				

Survey Statement 8

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Coast Guard HQ	9	30	3.3333333	1
MLC	31	101	3.2580645	0.6645161
Clinic Providers	46	140	3.0434783	1.6869565
Clinic Administrators	26	77	2.9615385	0.9984615

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	1.9042199	3	0.63474	0.5321938	0.6611607	2.6886915
Within Groups	128.81007	108	1.1926858			
Total	130.71429	111				

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Coast Guard HQ	9	30	3.3333333	1
MLC	31	101	3.2580645	0.6645161

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.0395161	1	0.0395161	0.0537529	0.8179011	4.0981717
Within Groups	27.935484	38	0.7351443			
Total	27.975	39				

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
MLC	31	101	3.2580645	0.6645161
Clinic Providers	46	140	3.0434783	1.6869565

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.8527714	1	0.8527714	0.6672805	0.4165886	3.9684709
Within Groups	95.848527	75	1.2779804			
Total	96.701299	76				

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
MLC	31	101	3.2580645	0.6645161
Clinic Administrators	26	77	2.9615385	0.9984615

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	1.2433285	1	1.2433285	1.5231092	0.2223971	4.0161954
Within Groups	44.897022	55	0.8163095			
Total	46.140351	56				

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Clinic Providers	46	140	3.0434783	1.6869565
Clinic Administrators	26	77	2.9615385	0.9984615

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.1115292	1	0.1115292	0.0773935	0.7816813	3.9777793
Within Groups	100.87458	70	1.4410655			
Total	100.98611	71				

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Coast Guard HQ	9	30	3.3333333	1
Clinic Administrators	26	77	2.9615385	0.9984615

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.9241758	1	0.9241758	0.9252542	0.3430949	4.1392525
Within Groups	32.961538	33	0.9988345			
Total	33.885714	34				

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Coast Guard HQ	9	30	3.3333333	1
Clinic Providers	46	140	3.0434783	1.6869565

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.6324111	1	0.6324111	0.3994348	0.5300982	4.0230168
Within Groups	83.913043	53	1.583265			
Total	84.545455	54				

Survey Statement 9

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Coast Guard HQ	9	25	2.7777778	0.6944444
MLC	31	83	2.6774194	1.3591398
Clinic Providers	46	111	2.4130435	0.8700483
Clinic Administrators	26	65	2.5	0.82

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*

Between Groups	1.8752198	3	0.6250733	0.6369757	0.5927939	2.6886915
Within Groups	105.98192	108	0.9813141			
Total	107.85714	111				

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Coast Guard HQ	9	25	2.7777778	0.6944444
MLC	31	83	2.6774194	1.3591398

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.0702509	1	0.0702509	0.0576203	0.8115877	4.0981717
Within Groups	46.329749	38	1.2192039			
Total	46.4	39				

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
MLC	31	83	2.6774194	1.3591398
Clinic Providers	46	111	2.4130435	0.8700483

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	1.2944118	1	1.2944118	1.214629	0.2739415	3.9684709
Within Groups	79.926367	75	1.0656849			
Total	81.220779	76				

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
MLC	31	83	2.6774194	1.3591398
Clinic Administrators	26	65	2.5	0.82

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.4451047	1	0.4451047	0.399528	0.5299519	4.0161954
Within Groups	61.274194	55	1.1140762			
Total	61.719298	56				

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Clinic Providers	46	111	2.4130435	0.8700483
Clinic Administrators	26	65	2.5	0.82

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.1256039	1	0.1256039	0.1473923	0.7022036	3.9777793
Within Groups	59.652174	70	0.8521739			
Total	59.777778	71				

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Coast Guard HQ	9	25	2.7777778	0.6944444
Clinic Administrators	26	65	2.5	0.82

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.515873	1	0.515873	0.6533658	0.4247009	4.1392525
Within Groups	26.055556	33	0.7895623			

Total	26.571429	34

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Coast Guard HQ	9	25	2.7777778	0.6944444
Clinic Providers	46	111	2.4130435	0.8700483

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	1.0013614	1	1.0013614	1.1870913	0.2808463	4.0230168
Within Groups	44.707729	53	0.8435421			
Total	45.709091	54				

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